

TC-K61 Limited Edition

Canadian Model
AEP Model
E Model



'Dolby' and the double-D symbol are the trade marks of Dolby Laboratories. Noise reduction system manufactured under license from Dolby Laboratories.

STEREO CASSETTE DECK

SPECIFICATIONS

GENERAL

- Power Requirements:** 120 V ac, 60 Hz (Canadian model)
220 V ac, 50/60 Hz
(240 V ac adjustable by authorized Sony personnel) (AEP model)
110, 120, 220 or 240 V ac
adjustable, 50/60 Hz (E model)
- Power Consumption:** 26W
- Dimensions:** Approx. 430 (w) x 130 (h) x 295 (d) mm
17 (w) x 5¹/₈ (h) x 11⁵/₈ (d) inches
including projecting parts and controls
- Weight:** Approx. 5.7 kg, 12 lb 10 oz


TAPE RECORDER SECTION

- Recording System:** 4-track 2-channel stereo
- Fast-forward and Rewind Time:** Approx. 80 sec. (with C-60 cassette)
- Frequency Response:** DOLBY NR OFF
Canadian model
- With TYPE IV cassette (Sony METALLIC)
20–19,000 Hz
30–17,000 Hz (±3 dB)
30–13,000 Hz (±3 dB, 0 VU recording)
 - With TYPE III cassette (Sony Fe-Cr)
20–19,000 Hz
30–17,000 Hz (±3 dB)
 - With TYPE II cassette (Sony EHF)
20–18,000 Hz
30–16,000 Hz (±3 dB)
 - With TYPE I cassette (Sony HFX)
20–17,000 Hz


— Continued on next page —

Tape Transport Mechanism Type	TCM-100V14
-------------------------------	------------

SAFETY RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK  ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE TRAME ET UNE MARQUE  SUR LES DIAGRAMMES SCHEMATIQUES, LES VUES EXPLODÉES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

SONY

SERVICE MANUAL

TC-K61 Limited Edition

Canadian Model
AEP Model
E Model



'Dolby' and the double-D symbol are the trade marks of Dolby Laboratories. Noise reduction system manufactured under license from Dolby Laboratories.


STEREO CASSETTE DECK

SPECIFICATIONS


GENERAL

- Power Requirements:** 120 V ac, 60 Hz (Canadian model)
220 V ac, 50/60 Hz
(240 V ac adjustable by authorized Sony personnel) (AEP model)
110, 120, 220 or 240 V ac
adjustable, 50/60 Hz (E model)
- Power Consumption:** 26W
- Dimensions:** Approx. 430 (w) x 130 (h) x 295 (d) mm
17 (w) x 5¹/₈ (h) x 11⁵/₈ (d) inches
including projecting parts and controls
- Weight:** Approx. 5.7 kg, 12 lb 10 oz

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK  ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE TRAME ET UNE MARQUE  SUR LES DIAGRAMMES SCHEMATIQUES, LES VUES EXPLOSÉES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

TAPE RECORDER SECTION

- Recording System:** 4-track 2-channel stereo
- Fast-forward and Rewind Time:** Approx. 80 sec. (with C-60 cassette)
- Frequency Response:** DOLBY NR OFF
Canadian model
- With TYPE IV cassette (Sony METALLIC)
20–19,000 Hz
30–17,000 Hz (±3 dB)
30–13,000 Hz (±3 dB, 0 VU recording)
 - With TYPE III cassette (Sony Fe-Cr)
20–19,000 Hz
30–17,000 Hz (±3 dB)
 - With TYPE II cassette (Sony EHF)
20–18,000 Hz
30–16,000 Hz (±3 dB)
 - With TYPE I cassette (Sony HFX)
20–17,000 Hz

— Continued on next page —

Tape Transport Mechanism Type	TCM-100V14
-------------------------------	------------

SONY

SERVICE MANUAL

TC-K61 Limited Edition

- AEP, E model
- With TYPE IV cassette (Sony METALLIC)
20–19,000 Hz
30–17,000 Hz (±3 dB)
30–13,000 Hz (±3 dB, 0 VU recording)
30–17,000 Hz (DIN)
 - With TYPE III cassette (Sony Fe-Cr)
20–19,000 Hz
30–17,000 Hz (±3 dB)
30–17,000 Hz (DIN)
 - With TYPE II cassette (Sony CD-α)
20–18,000 Hz
30–16,000 Hz (±3 dB)
30–16,000 Hz (DIN)
 - With TYPE I cassette (Sony BHF)
20–17,000 Hz
30–15,000 Hz (DIN)
- Wow and Flutter: 0.035% WRMS (Canadian model)
0.035% WRMS (NAB) } (AEP, E model)
±0.1% (DIN)
- S/N Ratio: DOLBY NR OFF
Canadian model
- With TYPE IV cassette (Sony METALLIC)
59 dB at peak level
 - With TYPE III cassette (Sony Fe-Cr)
59 dB at peak level
 - With TYPE II cassette (Sony EHF)
57 dB at peak level
AEP, E model
 - With TYPE IV cassette (Sony METALLIC)
59 dB at peak level (NAB)
56 dB (DIN)
 - With TYPE III cassette (Sony Fe-Cr)
59 dB at peak level (NAB)
56 dB (DIN)
 - With TYPE II cassette (Sony CD-α)
57 dB at peak level (NAB)
- DOLBY NR ON
Improved by 5 dB at 1 kHz, 10 dB above 5 kHz

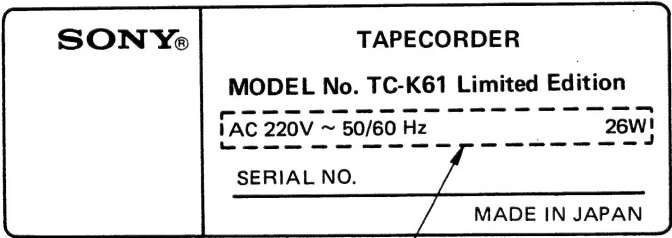
- Total Harmonic Distortion: 1.0% (with Sony METALLIC and Fe-Cr cassettes)
- Record Bias Frequency: 105 kHz
- Inputs: MIC (two phone jacks)
sensitivity 0.25mV (–70 dB) for a low-impedance microphone
LINE IN (two phono jacks)
sensitivity 77.5 mV (–20 dB)
input impedance 50 kΩ
REC/PB (connector) . . . (AEP, E model)
input impedance less than 10 kΩ
- Outputs: LINE OUT (two phono jacks)
Maximum output level 0.435 V (–5 dB) at a load impedance of 50 kΩ
with PHONES/LINE OUT level control at “0”
Variable in five steps from –5 dB to –29 dB
Load impedance over 10 kΩ
HEADPHONES (binaural jack)
Output level variable in five steps from –20 dB to –44 dB at a load impedance of 8Ω
REC/PB (connector) . . . (AEP, E model)
output impedance less than 10 kΩ

0 dB = 0.775 V

- LED Peak Program Meters: Response range: –40 dB to +8 dB
Frequency response: 20 –20,000 Hz ±1.5 dB
Response time: 1 millisecond
Decay time (from 0 dB to –20 dB): 750 milliseconds
Overshoot: None
Indicator elements: 16 elements for each channel

MODEL IDENTIFICATION

– Specification Label –



- AC 220V ~ 50/60 Hz 26W AEP model
AC 120V 60 Hz 26W Canadian model
AC 110, 120, 220, 240V ~ 50/60 Hz 26W E model

SERVICING NOTE

When the top cover is removed the internal photo transistor may pick up stray light and shut the set off.

Handling Precautions for MOS ICs

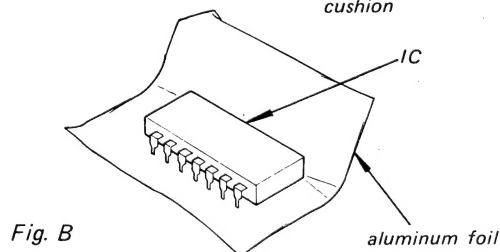
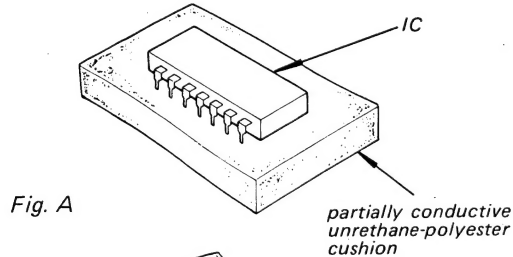
Generally, the insulation resistance of the oxide layer in MOS IC structures is very high, and the oxide layer is very thin. Because of this, it is possible that the static voltages usually present on clothes and the human body will be enough to generate a potential difference across the insulator, high enough to cause a breakdown of the insulating layer.

The following precautions should be taken while handling these ICs.

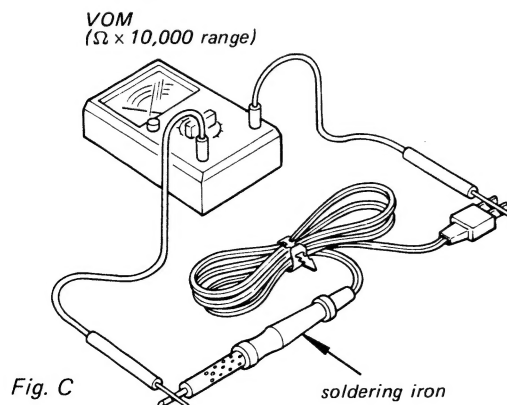
(Particular care should be taken under conditions of low humidity.)

Precautions in Replacing MOS ICs

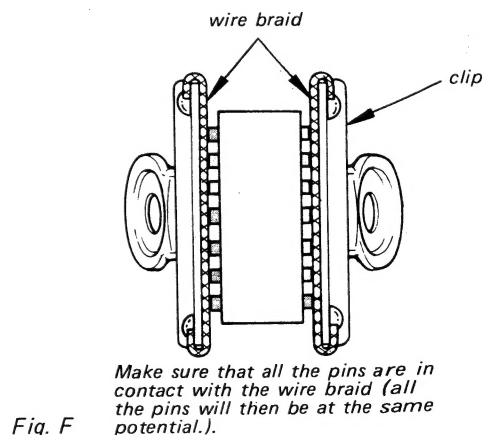
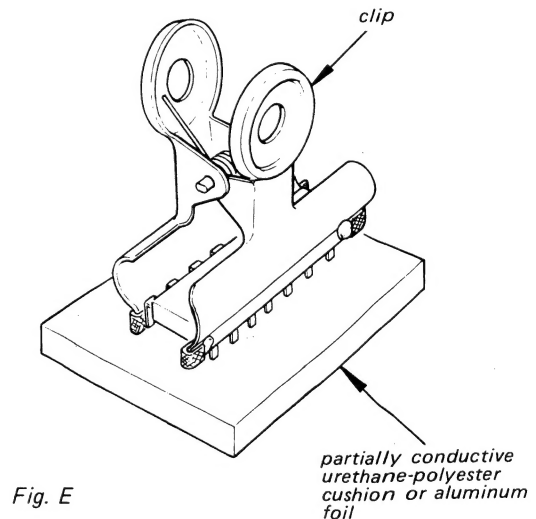
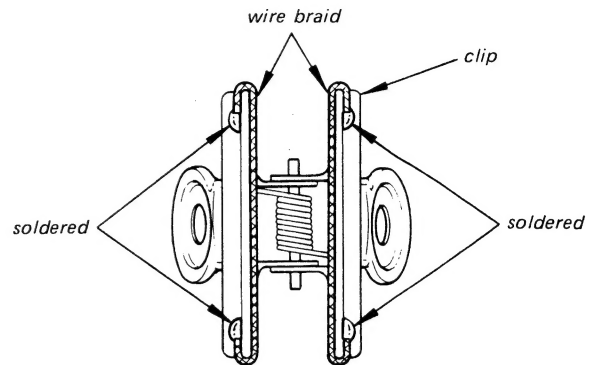
1. Store new ICs by inserting them into a urethane-polyester cushion (which is somewhat conductive), or wrapping it in aluminum foil, so that all the pins are at the same potential. (The ICs should be stored in that manner until mounted on the circuit board.)



2. Check the soldering iron for possible power-line leakage current. Make sure that there is no leakage path by connecting an ohmmeter to the tip of the soldering iron and the plug as shown in Fig. C. If there is a leakage path, use some other soldering iron.



3. Equalize any potential difference between the clothes, the tools in use, the work bench, the set being worked on, and the packaged IC by touching them all in succession with the hands or a conductive wire or tool.
4. The following are effective methods for handling ICs that remove the potential difference across the oxide layer.
 - Use a paper clip modified by soldering in a wire braid insert.



- Take a short length of fine bare wire and wind it around the IC so that it shorts all the pins of the IC, while it is still in the urethane-polyester cushion or aluminum foil. This ensures that all the pins are at the same potential.

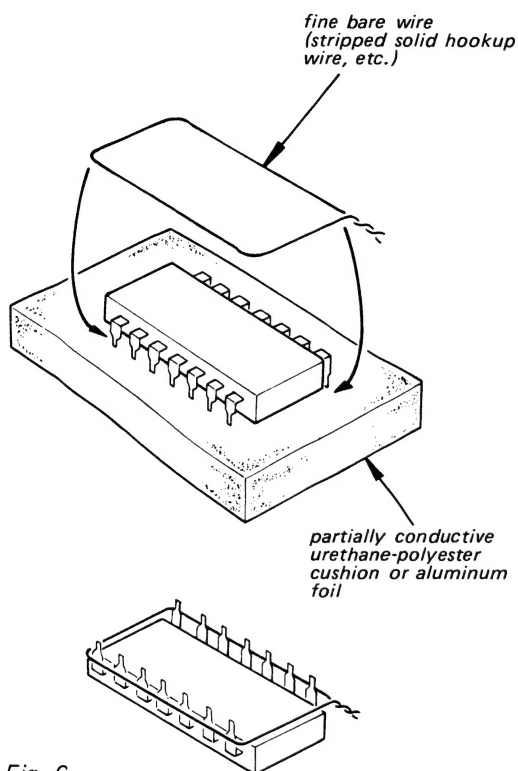


Fig. G

- When it is necessary to handle the IC with the fingers, do not touch any pin, and hold the IC at the ends of its plastic-package case as shown in Fig. H.

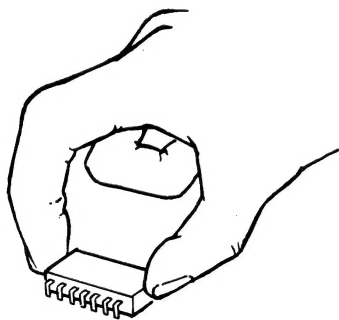


Fig. H

5. Method of Mounting

Insert the IC while holding it with the modified clip, and solder all the pins with the clip still shorting the pins. (Similarly, solder all the pins while the bare shorting wire is still wound around them.). Remove the clip or the bare shorting wire only after all the pins have been soldered.

Precaution while Checking C-MOS ICs

The C-MOS ICs (Complementary MOS) are MOS ICs that have their output sections made up of N-channel and P-channel push-pull stages to increase their speed of operation. If the output terminal of these ICs comes into contact with B+ or B- voltage, then the FET which is ON at that time will either become shorted or open.

This is valid for all the output sections that are connected together by the interconnections. Even the circuits that are physically separated (and not on the same board) can be destroyed simultaneously.

Example:

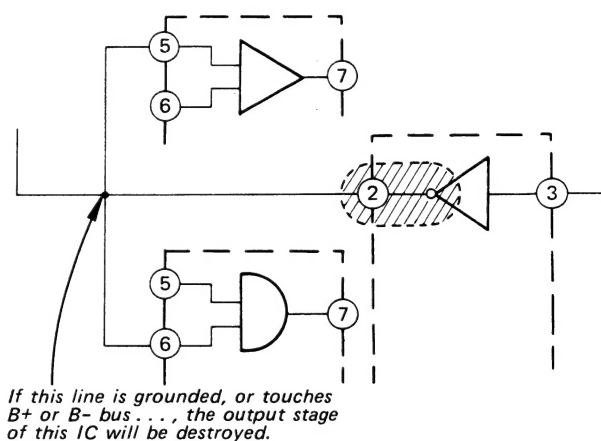
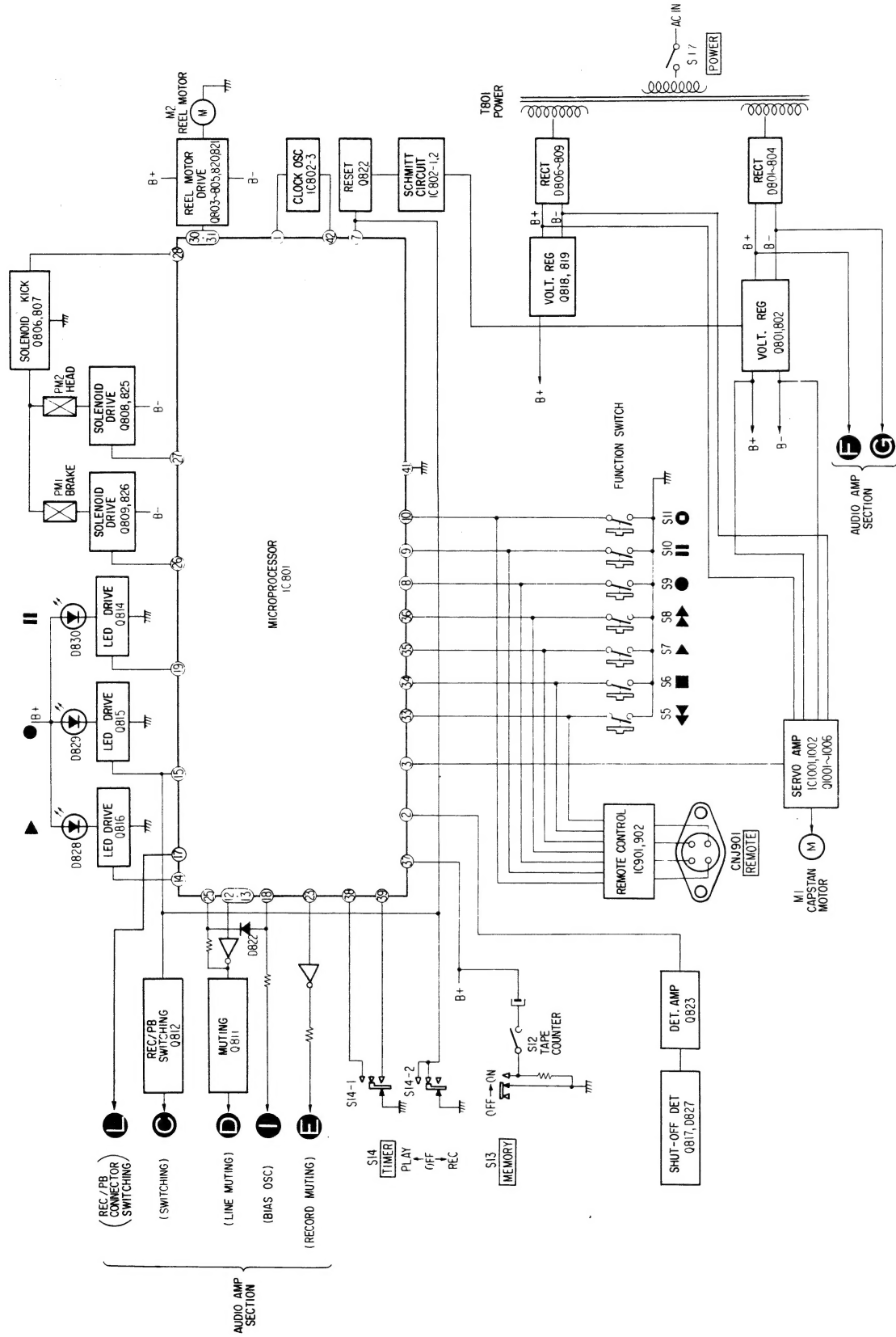


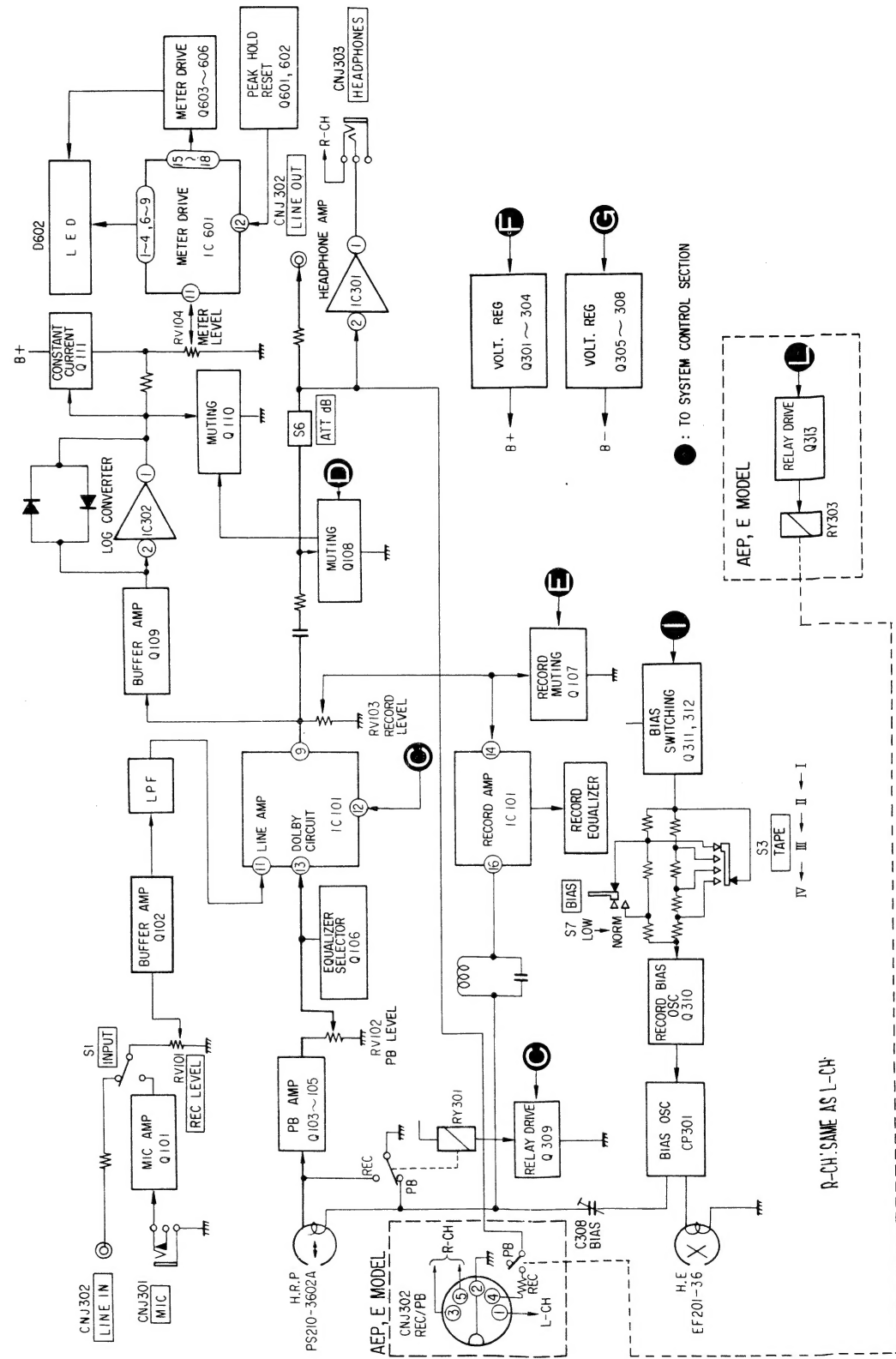
Fig. I

SECTION 1 OUTLINE

1-1. BLOCK DIAGRAM – System Control Section –



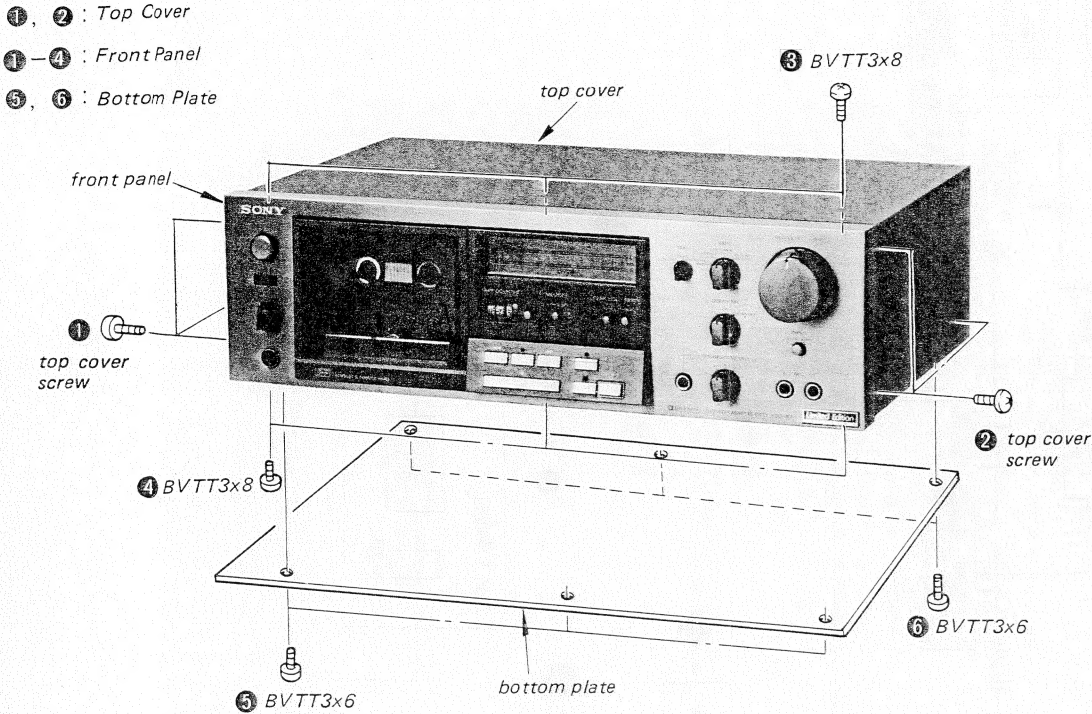
1-2. BLOCK DIAGRAM



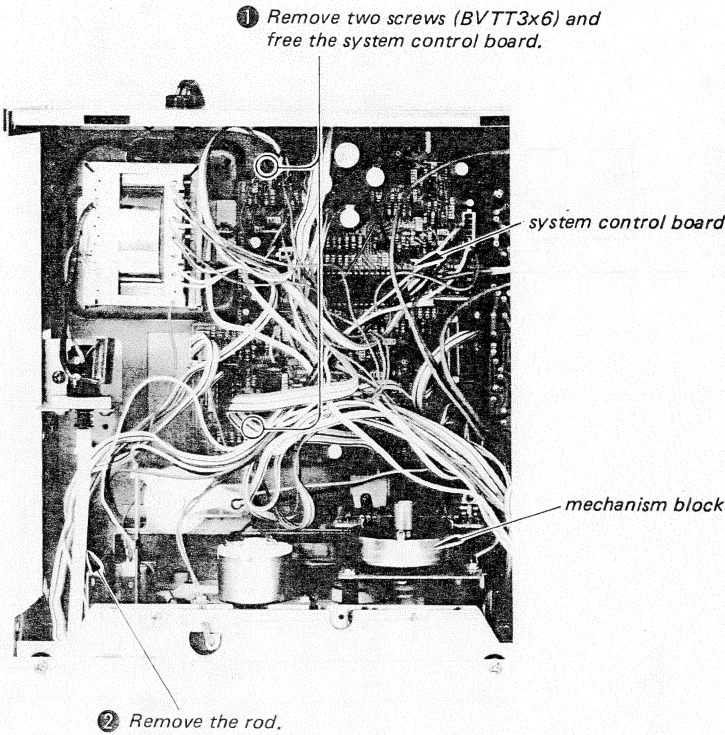
SECTION 2
DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

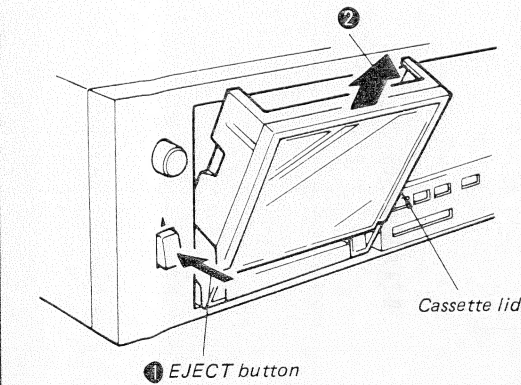
TOP COVER/FRONT PANEL/BOTTOM PLATE



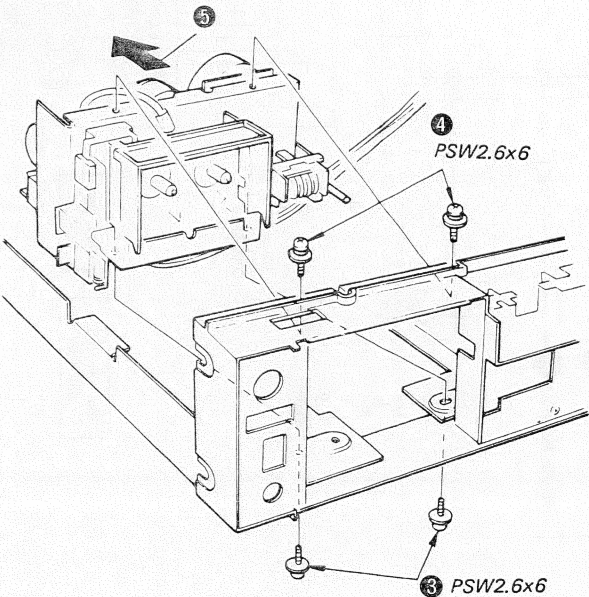
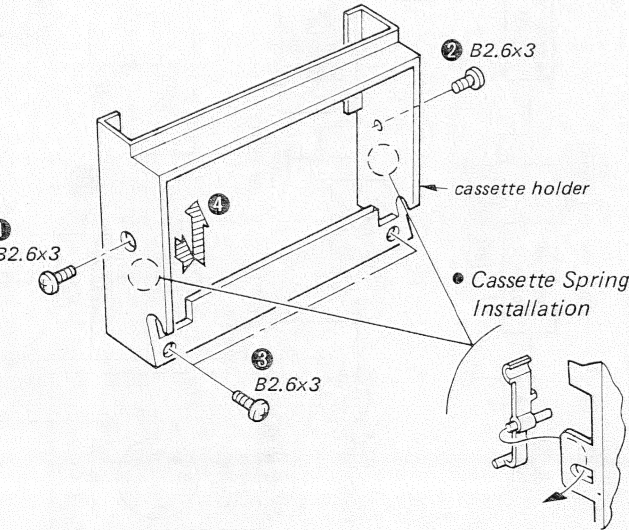
MECHANISM BLOCK



CASSETTE LID



CASSETTE HOLDER



SECTION 3 ADJUSTMENTS

3-1. MECHANICAL ADJUSTMENTS

PRECAUTION

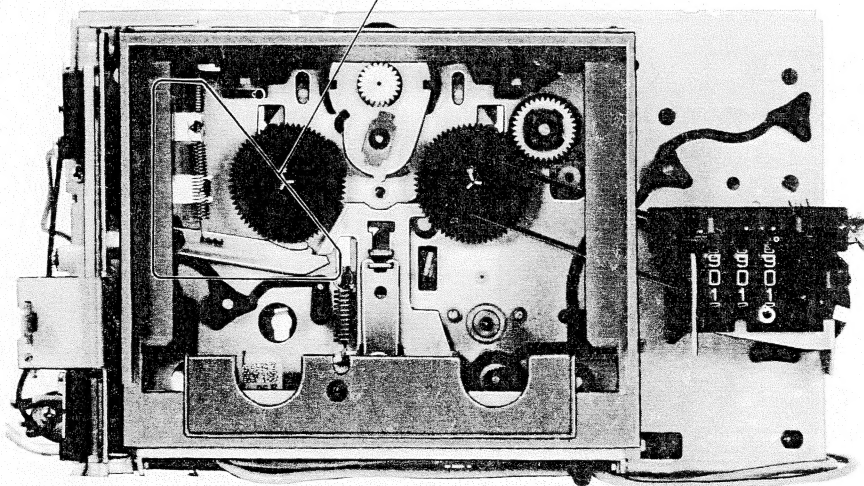
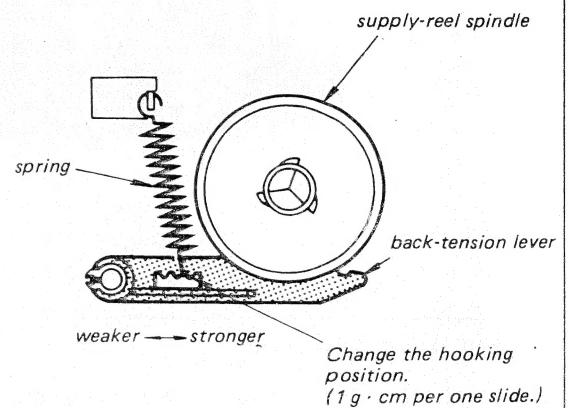
- Clean the following parts with a denatured-alcohol-moistened swab:

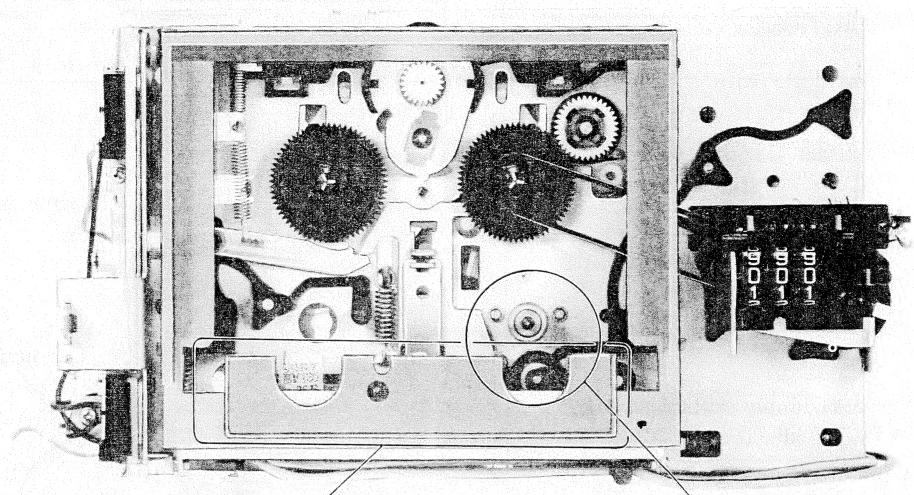
record/playback head	pinch roller
erase head	rubber belts
capstan	idlers
- Demagnetize the record/playback head with a head demagnetizer.
- Do not use a magnetized screwdriver for the adjustments.
- After the adjustments, apply suitable locking compound to the parts adjusted.
- The adjustments should be performed with the rated power supply voltage unless otherwise noted.

Torque Measurement and Back Tension Torque Adjustment

- | Torque | Torque meter | Meter reading |
|--------------|--------------|---------------------------------------|
| Forward | CQ-102C | 28–50 g · cm
(0.39–0.69 oz · inch) |
| Back tension | CQ-102C | 2.5–5 g · cm
(0.04–0.06 oz · inch) |

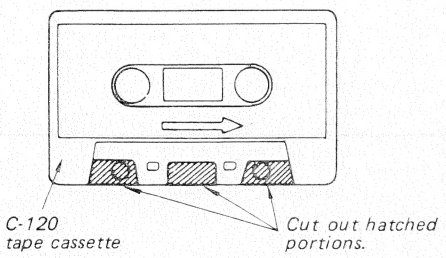
- If the specified back-tension torque is not obtained, change the hooking position.



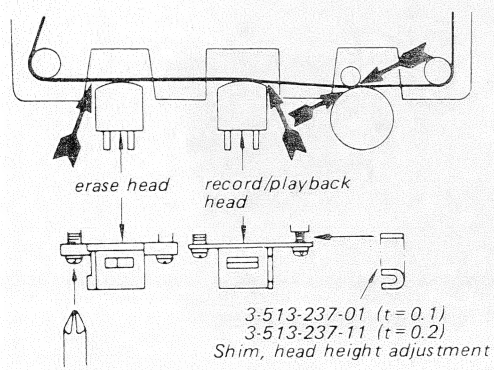


Head Height Adjustment

- 1. Prepare an adjustment cassette as shown below.

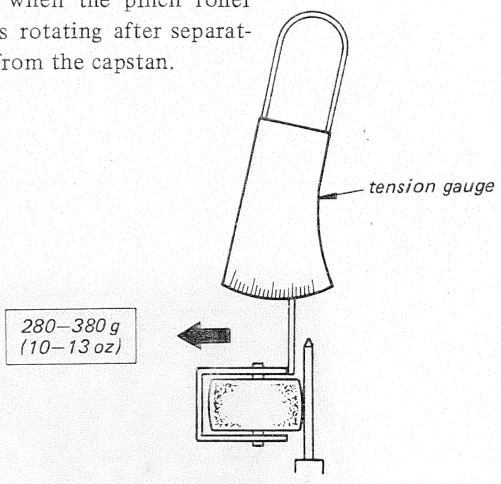


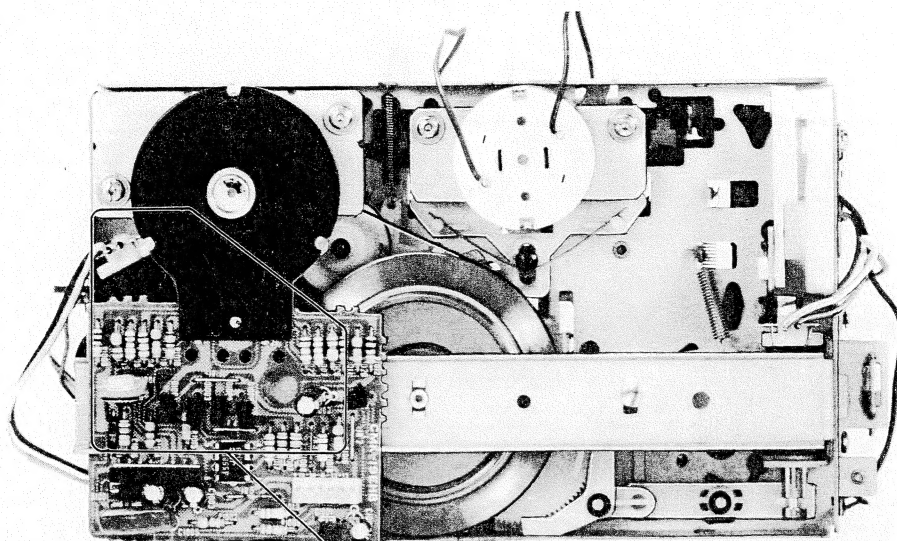
- 2. In playback mode and viewing from the front, adjust the head heights to eliminate tape curl and tape twist at portions shown by arrow.



Pinch Roller Pressure Measurement
— Forward Mode —

Slowly pull the pinch roller and read the tension gauge just when the pinch roller stops rotating after separating from the capstan.





Brake Solenoid (PM1) Position Adjustment

— Stop Mode —

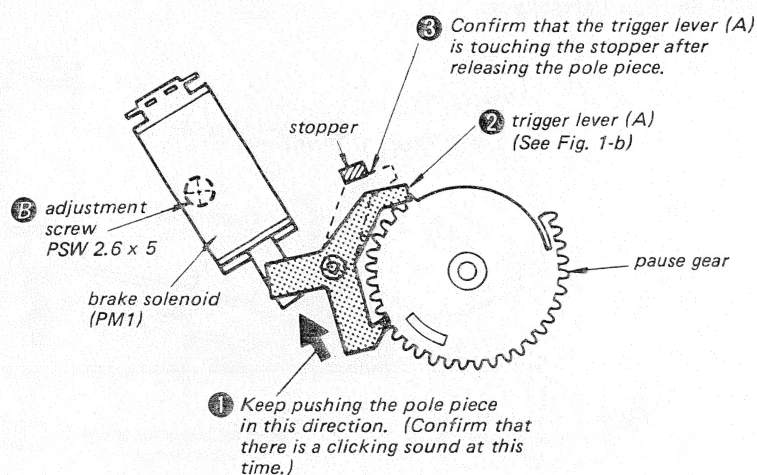
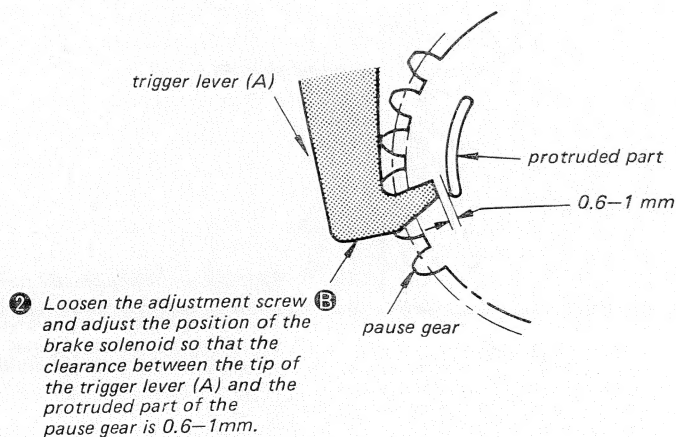
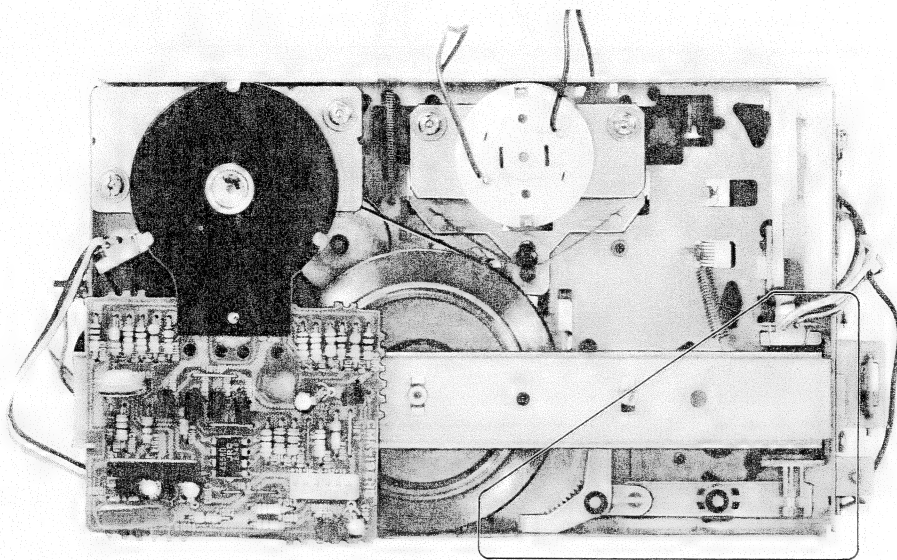


Fig. 1-a.





Head Solenoid (PM2) Position Adjustment
— Stop Mode —

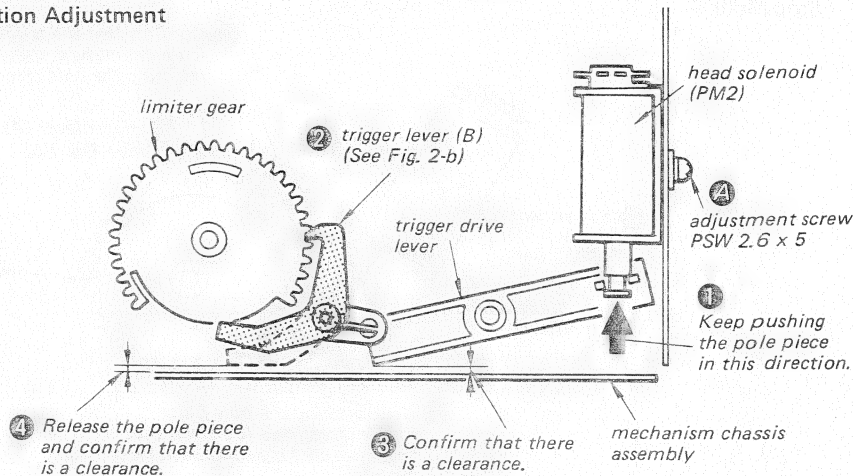
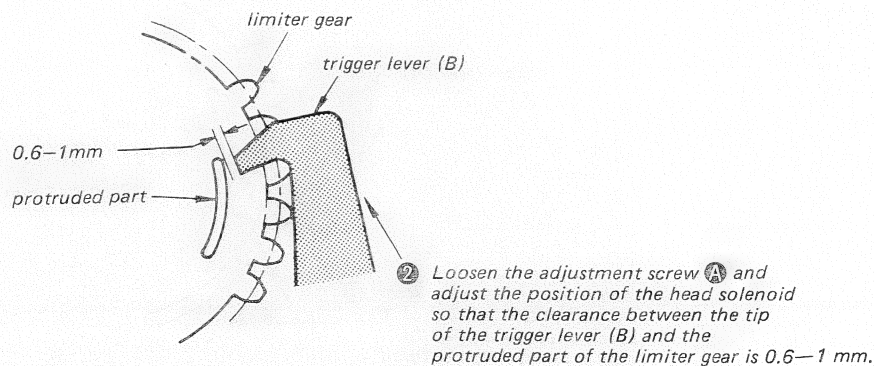


Fig. 2-a



3-2. ELECTRICAL ADJUSTMENTS

Note: The adjustment should be performed in the order given in this service manual. The adjustments should be performed for both L-CH and R-CH.

- Set the BIAS and EQ switches according to the tape as follows.

Tape	BIAS switch	EQ switch
CS-10	NORM	TYPE I
CS-25	NORM	TYPE II
CS-30	NORM	TYPE III
CS-40	NORM	TYPE IV

- Switches and controls should be set as follows unless otherwise specified.

DOLBY NR switch: OFF
 EQ switch: TYPE I
 BIAS switch: NORM
 REC MUTE switch: OFF
 Timer switch: OFF
 LINE OUT control: "0"

- Standard Record:

Deliver the standard input signal level to the input jack and set the REC LEVEL control to obtain the standard output signal level.

Standard Input Level

	MIC	LINE IN	REC/PB (AEP, E model)
source impedance	300 Ω	10 k Ω	100 k Ω
input level	0.77 mV (-60 dB)	0.25 V (-10 dB)	17 mV (-33 dB)

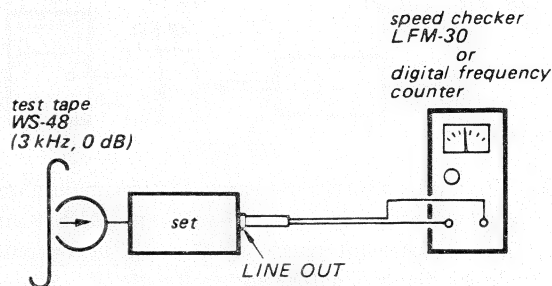
Standard Output Level

	LINE OUT	HEAD-PHONES	REC/PB (AEP, E model)
load impedance	47 k Ω	8 Ω	50 k Ω
output level	0.44 V (-5 dB)	39 mV (-26 dB)	0.44 V (-5 dB)

Tape Speed Adjustment

Procedure:

Mode: playback



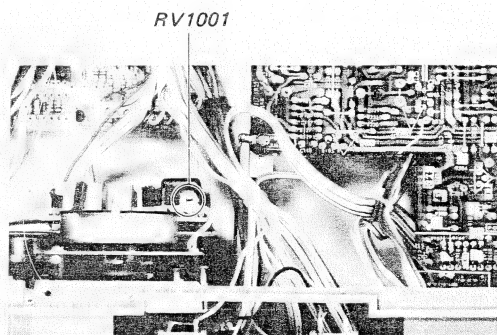
Specification:

Speed checker	Digital frequency counter
-0.3 to +0.3%	2990 - 3010 Hz

Frequency difference between the beginning and the end of the tape should be within 0.7 % (20 Hz).

Adjustment Location:

- servo amp board -

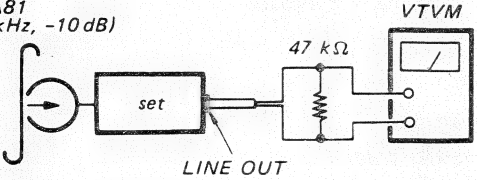


Record/playback Head Azimuth Adjustment

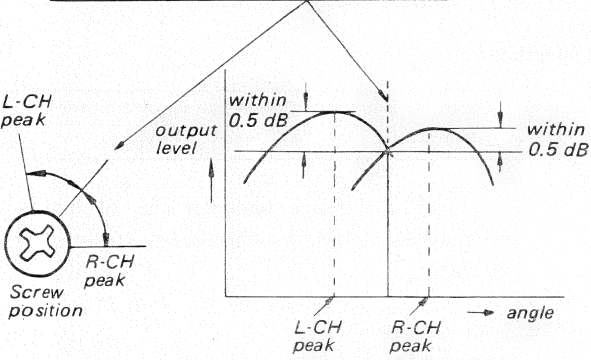
Procedure:

1. Mode: playback

test tape
P-4-A81
(6.3 kHz, -10 dB)



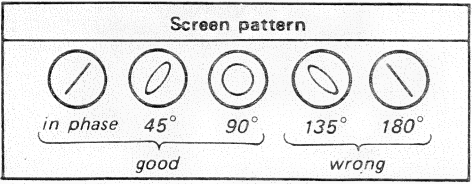
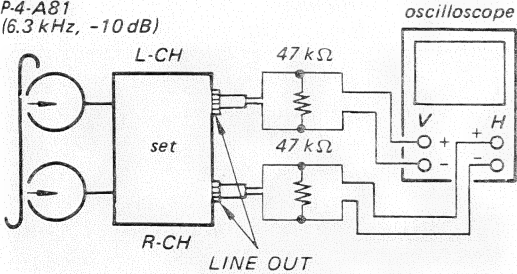
2. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 0.5 dB.



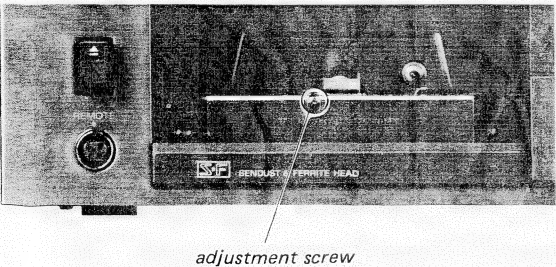
3. Phase Check

Mode: playback

test tape
P-4-A81
(6.3 kHz, -10 dB)



Adjustment Location:

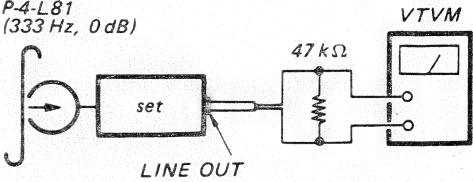


Playback Level Adjustment

Procedure:

Mode: Playback

test tape
P-4-L81
(333 Hz, 0 dB)



Adjust RV102 (L-CH) and RV202 (R-CH) to obtain the specified LINE OUT level.

Specification:

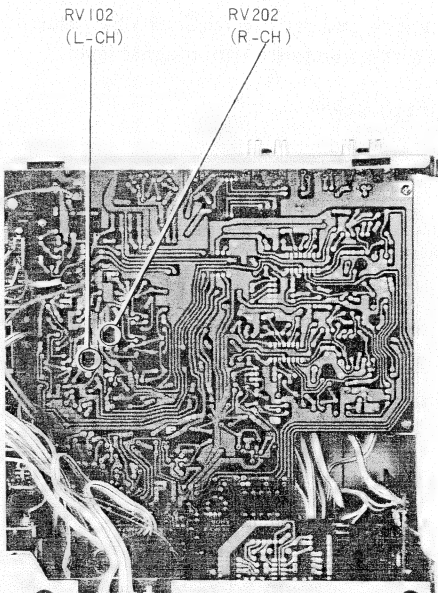
LINE OUT level: 0.52 – 0.59 V
(–3.5 to –2.5 dB)

Level difference between channels:
less than 0.5 dB

Check that the LINE OUT level does not change in playback mode while changing the mode from playback to stop several times.

Adjustment Location:

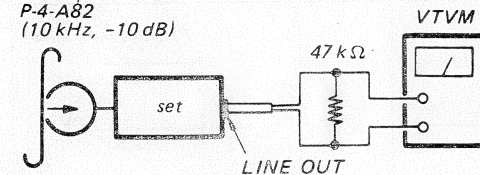
– record/playback board –



Playback Equalizer Adjustment

Procedure:

Mode: playback

test tape
P-4-A82
(10 kHz, -10 dB)

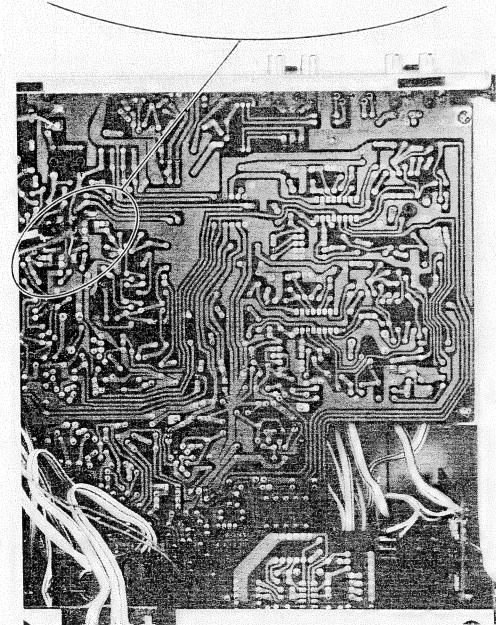
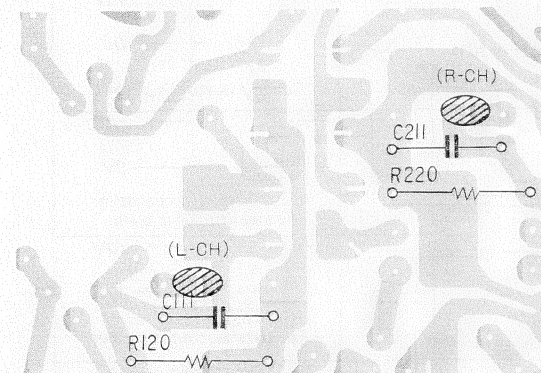
Specification:

LINE OUT level: 0.12–0.27V
(–16 to –9 dB)

Adjustment Location:

– record/playback board –

Bridge patterns	10 kHz level
open	down
bridge	up



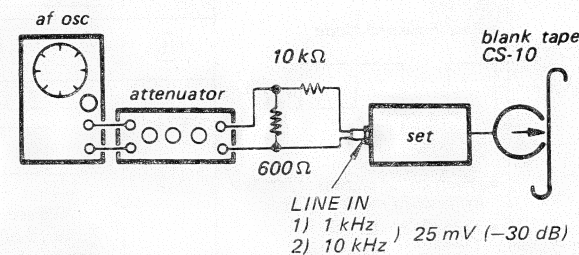
Record Bias Adjustment

Setting:

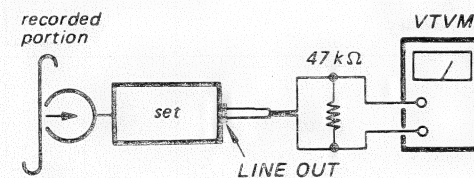
REC LEVEL control: standard record
(See page 13.)

Procedure:

1. Mode: record



2. Mode: playback

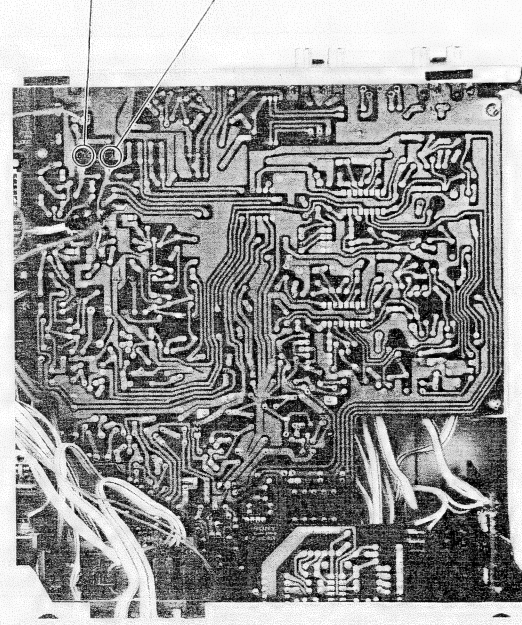


Confirm that the LINE OUT level of 10 kHz signal is 0 dB relative to that of 1 kHz.
If necessary, adjust C308 (L-CH/R-CH).

Adjustment Location:

– record/playback board –

C308 (L-CH) C308 (R-CH)



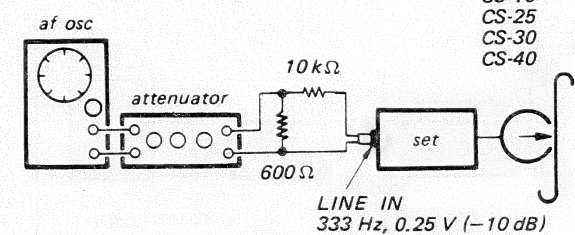
Record Level Adjustment

Setting:

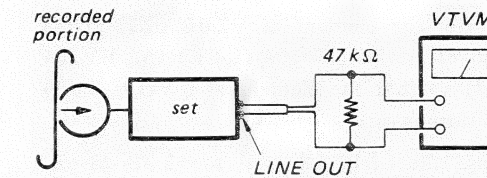
REC LEVEL control: standard record
(See page 13.)

Procedure:

1. Mode: record



2. Mode: playback



Adjust RV103 (L-CH) and RV203 (R-CH) to obtain the specified LINE OUT level.

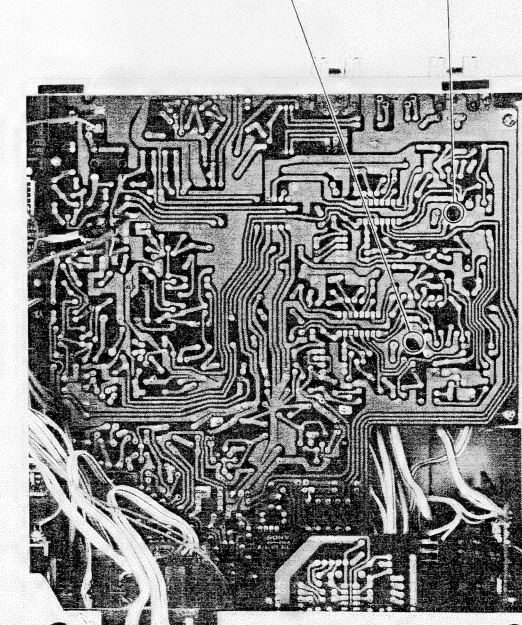
Specification:

Tape	LINE OUT Level
CS-10	0.41 – 0.46 V (–5.5 to –4.5 dB)
CS-25, 30, 40	0.37 – 0.52 V (–6.5 to –3.5 dB)

Adjustment Location:

– record/playback board –

RV103 (L-CH) RV203 (R-CH)



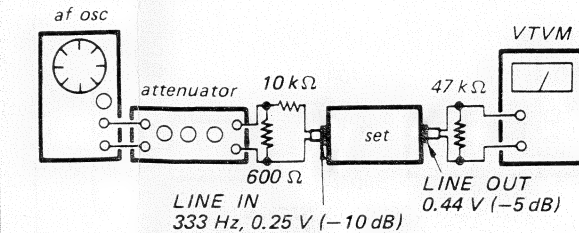
Level Meter Calibration

Setting:

REC LEVEL control: standard record
(See page 13.)

Procedure:

1. Mode: record



2. Just after the element at –2 dB (0 dB mark) turned off, adjust RV104 (L-CH) and RV204 (R-CH) so that the element at 0 VU (–4 dB) keeps turning on.

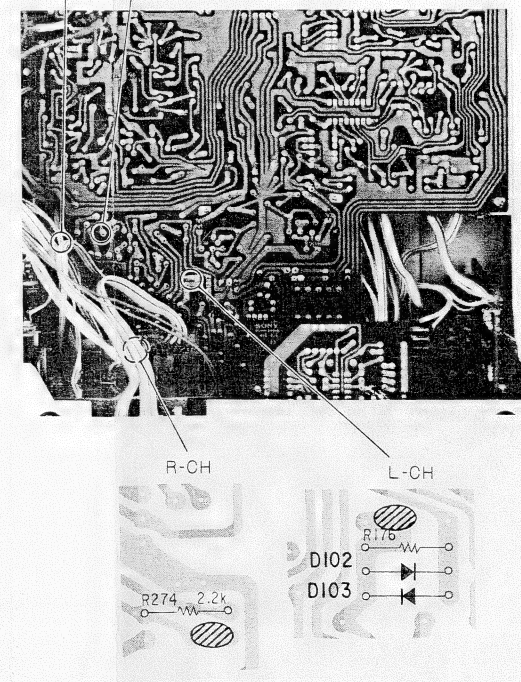
3. Increase the LINE IN level to +2 dB ±1 dB. The right-most element at +8 dB should turn on.

4. Decrease the LINE IN level to –46 dB ±3 dB. The second element from the left end should turn off. If not even with a LINE IN level of –49 dB, bridge the patterns as follows.

Adjustment Location:

– record/playback board –

(L-CH) (R-CH)
RV104 RV204



SECTION 4 DIAGRAMS

Voltages and Waveforms at the Terminals of IC801.

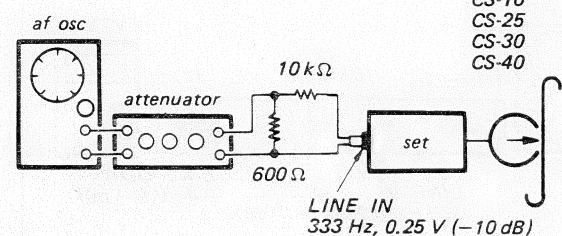
Record Level Adjustment

Setting:

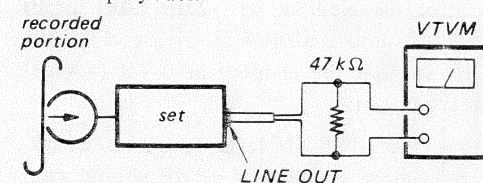
REC LEVEL control: standard record
(See page 13.)

Procedure:

1. Mode: record



2. Mode: playback



Adjust RV103 (L-CH) and RV203 (R-CH) to obtain the specified LINE OUT level.

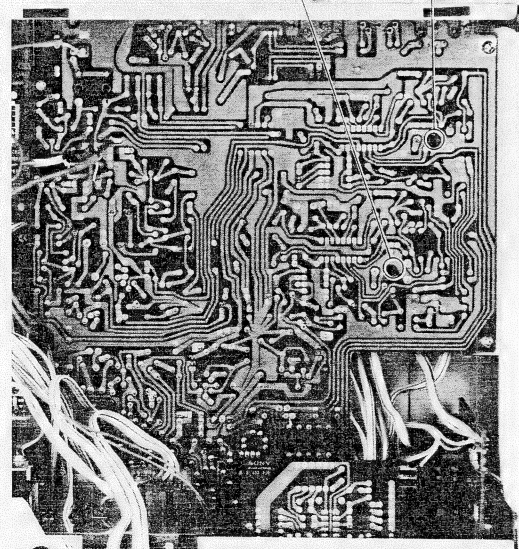
Specification:

Tape	LINE OUT Level
CS-10	0.41 - 0.46 V (-5.5 to -4.5 dB)
CS-25, 30, 40	0.37 - 0.52 V (-6.5 to -3.5 dB)

Adjustment Location:

- record/playback board -

RV103 (L-CH) RV203 (R-CH)



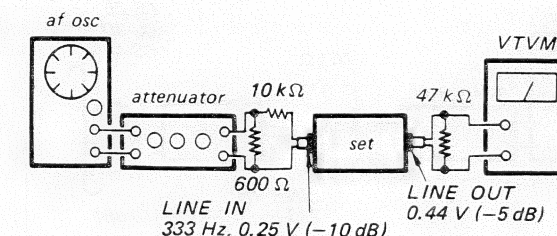
Level Meter Calibration

Setting:

REC LEVEL control: standard record
(See page 13.)

Procedure:

1. Mode: record



2. Just after the element at -2 dB (mark) turned off, adjust RV104 (L-CH) and RV204 (R-CH) so that the element at 0 VU (-4 dB) keeps turning on.

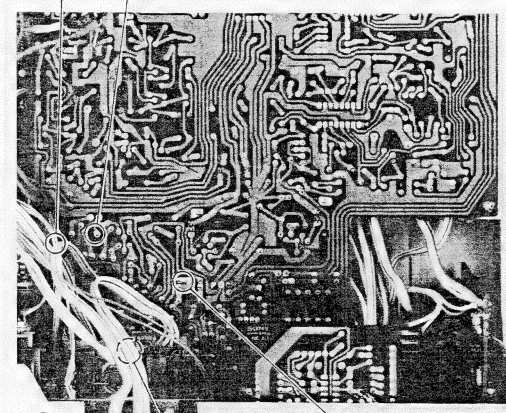
3. Increase the LINE IN level to +2 dB ± 1 dB. The right-most element at +8 dB should turn on.

4. Decrease the LINE IN level to -46 dB ± 3 dB. The second element from the left end should turn off. If not even with a LINE IN level of -49 dB, bridge the patterns as follows.

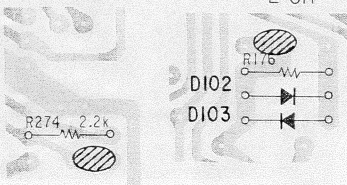
Adjustment Location:

- record/playback board -

(L-CH) (R-CH)
RV104 RV204



R-CH L-CH



Terminal No.	Waveform or Voltage	Terminal No.	Waveform or Voltage	Terminal No.	Waveform or Voltage
①	9V p-p 3 μsec	⑭	Forward Mode 10V 0V	⑲	10 Vdc
②	• Forward Mode 10V p-p 0.7 sec • Fast Forward Mode 10V p-p 25 msec • When pause button is pushed in forward mode: 10 Vdc • Tape End: 10 Vdc	⑮	Record Mode 10V 0V	⑳	10 Vdc
③	6V p-p 8 msec	⑯	10 Vdc	㉑	Fast Forward Mode 10V -2.6V 0V 0.3 sec. Fast Forward button is pushed.
④ to ⑥	10 Vdc	⑰	Forward Mode 10V 0V 0.5 sec Forward button is pushed.	㉒	Rewind Mode 10V 0.3V 0.3 sec Rewind button is pushed.
⑦	S17 (POWER): ON 9V p-p 0.5 sec S17 (POWER): OFF	⑱	Record/Forward Mode 10V 0V	㉓	10 Vdc
⑧	10V 3V Record button is pushed.	㉔	10 Vdc	㉕	10V 0V Stop button is pushed or the cassette lid is open.
⑨	10V 4V Pause button is pushed.	㉖	Forward or Record Mode 10V 4V 0V 0.6 sec Forward or Record button is pushed.	㉗	10V 1V Forward button is pushed.
⑩	10V 0V REC MUTE button is pushed.	㉘	Fast Forward or Rewind Mode or Record/Forward/Pause Mode 10V 0V	㉙	10V 1V Fast Forward button is pushed.
⑪	10 Vdc	㉚	Forward Mode 10V 0V	㉛	• S13(MEMORY): ON 10V 0V Tape counter is at 999 in rewind mode.
⑫ ⑬	Fast Forward or Rewind Mode 10V 0V	㉜	0.35 sec. 10V 0V Forward or Fast Forward or Rewind button is pushed.	㉝	• S14(timer): PLAY 0V dc
		㉞		㉟	• S14(timer): REC 0V dc
				㊱	When the accidental erasure prevention tab is broken: 0V When the accidental erasure prevention tab is not broken: 9.3V
				㊲	0 Vdc
				㊳	3V p-p 3 μsec

The voltages in this chart is measured with a 10MΩ oscilloscope w/probe.

(Therefore, the voltages given in this chart will differ from those given in the schematic or mounting diagram which are measured with a VOM.)

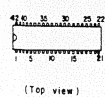
4-1. MOUNTING DIAGRAM —System Control Section—
—Conductor Side—

- Refer to page 17 for voltages and waveforms at the terminals of IC801.

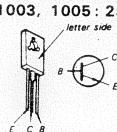
Replacement Semiconductors

For replacement, use semiconductors except in ().

IC801: μ PD547C-042



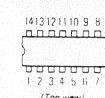
Q804, 1004, 1006: 2SB731
Q805, 1003, 1005: 2SD809



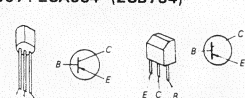
D810, 811: HZ11B2L (HZ11B2)



IC802: MSM4069 (MB84069)
IC901: μ PC339C



Q807: 2SA684 (2SB734)



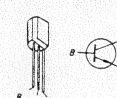
D827: SR110



IC902, 1002: μ PC4558C (μ PC4558)



Q808, 809: 2SC2001 (2SD1012)



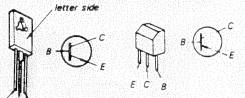
D828: SEL1331G



IC1001, 1002: CX069



Q810: 2SB731 (2SB564)



D829: SEL1112R



Q801: 2SC1061 (2SC1419)



Q818: 2SB548



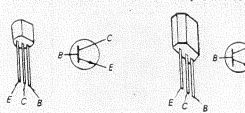
D830: SEL1741Y



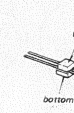
Q802, 811, 812, 821: 2SA1015
Q824-826: 2SA1027R (2SA1026)



Q1001, 1002: 2SC1364 (2SC634A)



D1002, 1003: F1410



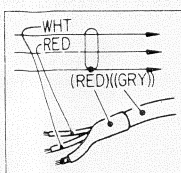
Q803, 806
Q814-816: 2SC1364 (2SC1815)
Q819, 820
Q822, 823: 2SC1364



D801-809: 10E2
D812, 813
D815, 817
D822-826
Q901-903



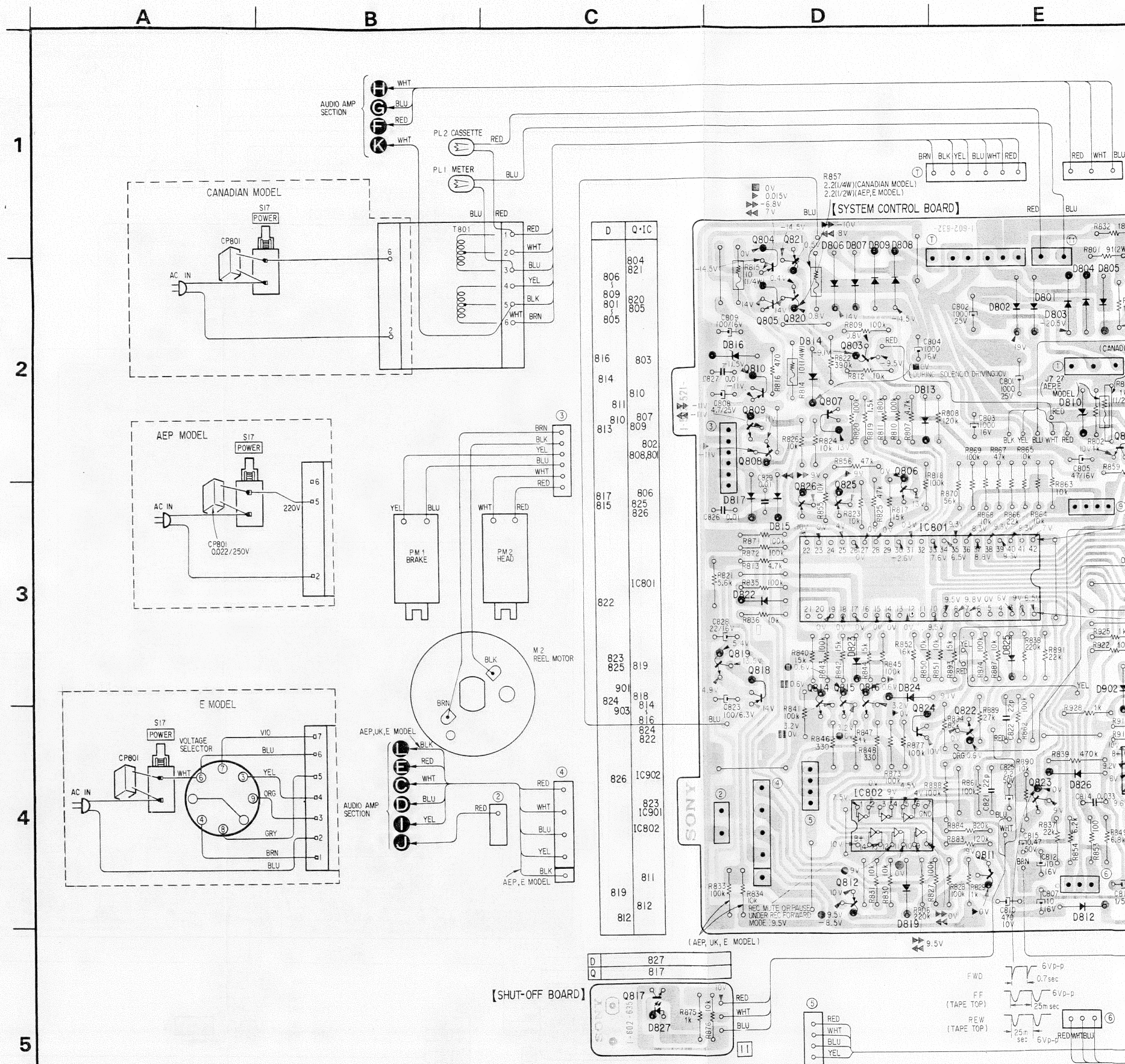
- Color code of sleeving over the end of the jacket.

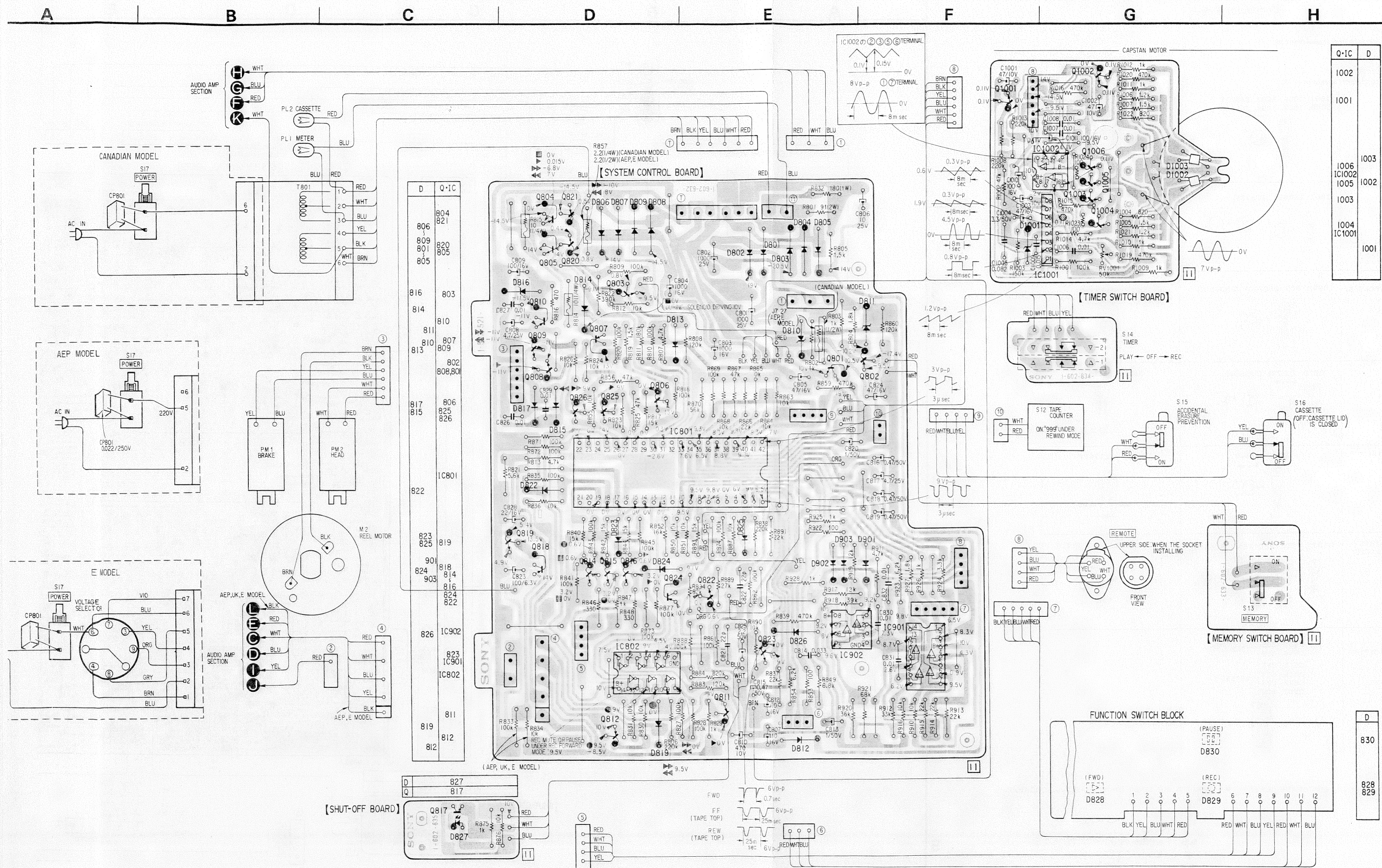


- (F): fusible resistor.
- (B+): B+ pattern
- (B-): B- pattern

- Readings are taken under no-signal conditions with a VOM (20 k Ω /V).
- no mark: stop

- ▶: Forward
- ▶▶: Fast Forward
- : record
- ⏸: pause
- ⏸: rec mute
- : stop





—System Control Section—

- 1

2

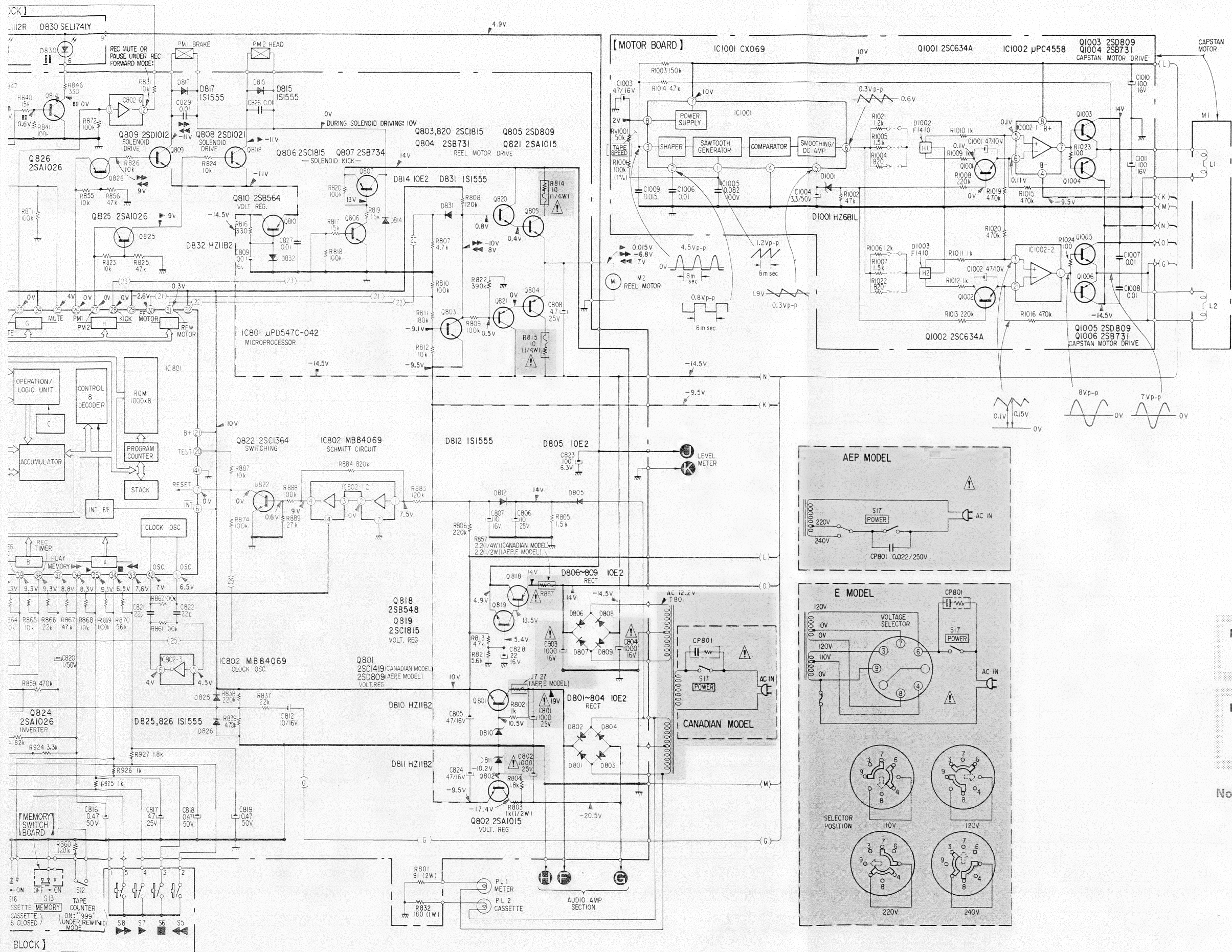
3

4

5



-22-



Note:

- All capacitors are in μF unless otherwise noted. pF = $\mu\mu F$. 50WV or less are not indicated except for electrolytics.
- All resistors are in ohms, $\frac{1}{4}W$ unless otherwise noted. k Ω : 1000 Ω , M Ω = 1000 k Ω .
- : fusible resistor.
- : B+ bus.
- : B- bus.
- : adjustment for repair.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken with a VOM (20 k Ω/V).
- no mark: STOP
- ▶ : FORWARD
- ▶▶ : FAST FORWARD
- ◀◀ : REWIND
- : RECORD
- ⊙ : REC MUTE
- : PAUSE
- : STOP
- Voltage variations may be noted due to normal production tolerances.
- Switch

Ref. No.	Switch	Position
S5	REWIND	OFF
S6	STOP	OFF
S7	FORWARD	OFF
S8	FAST FORWARD	OFF
S9	RECORD	OFF
S10	PAUSE	OFF
S11	REC MUTE	OFF
S12	TIMER	OFF
S13	MEMORY	OFF
S14	TAPE COUNTER	OFF
S15	ACCIDENTAL ERASURE PREVENTION	ON
S16	CASSETTE LID	OFF
S17	POWER	OFF

Note: The components identified by shading and mark are critical for safety. Replace only with part number specified.

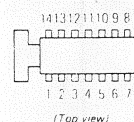
Note: Les composants identifiés par une trame et une marque sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Note: The voltages at the terminals of IC801 are measured with a VOM and differs from the voltages given beside the waveform on page 17.

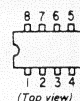
Replacement Semiconductors

For replacement, use semiconductors except in ().

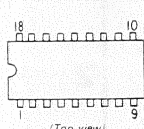
IC101 : CX174



IC301 : μ PC4558C (μ PC4557C)
IC302 : μ PC4558C



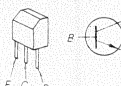
IC601 : MSL9351 (MSL9351RS)



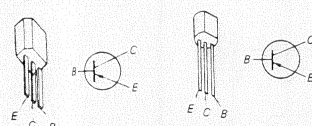
Q101, 102 : 2SC1345 (2SC1345E)
Q201, 202

Q104, 204 : 2SC1345

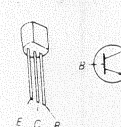
Q108, 208 : 2SC2001



Q103, 105 : 2SA1027R (2SA844)
Q203, 205 : 2SA1027R (2SA844)
Q305, 306

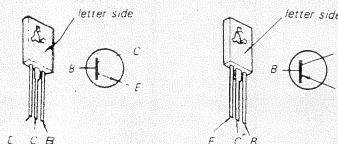


Q312, 313 : 2SC1364
Q106, 107 : 2SC1364
Q109 ~ 111 : 2SC1364
Q206, 207 : 2SC1364
Q209 ~ 211 : 2SC1364
Q302, 303 : 2SC1364 (2SC458)

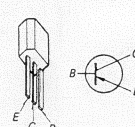


Q301 : 2SD414

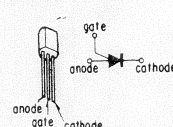
Q307 : 2SB548



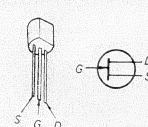
Q311 : 2SA1027R (2SA1026A)



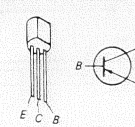
Q601 : N13T1



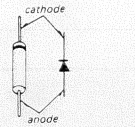
Q304, 308 : 2SK30A



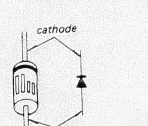
Q603 ~ 606 : 2SA952 (2SA952-K2)



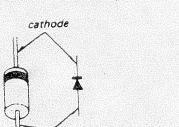
D101 ~ 105 : 1S1555
D201 ~ 205 : 1S1555
D303, 305 : 1S1555
D306, 601 : 1S1555
D307



D301, 302 : HZ6B2L (HZ6B1L)

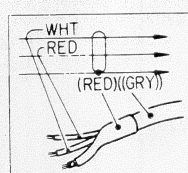


D304 : HZ12C2L (HZ12C3L)
D816 : HZ12B2L



4-3. MOUNTING DIAGRAM — Audio Amp Section — — Conductor Side —

• Color code of sleeving over the end of the jacket.



• (F) : fusible resistor.

• B+ pattern

• B- pattern

• : signal path

• : L-CH signal path

• : R-CH signal path

• Readings are taken under no-signal conditions with a VOM (20 k Ω /V).

no mark : stop

▶ : Forward

▶▶ : Fast Forward

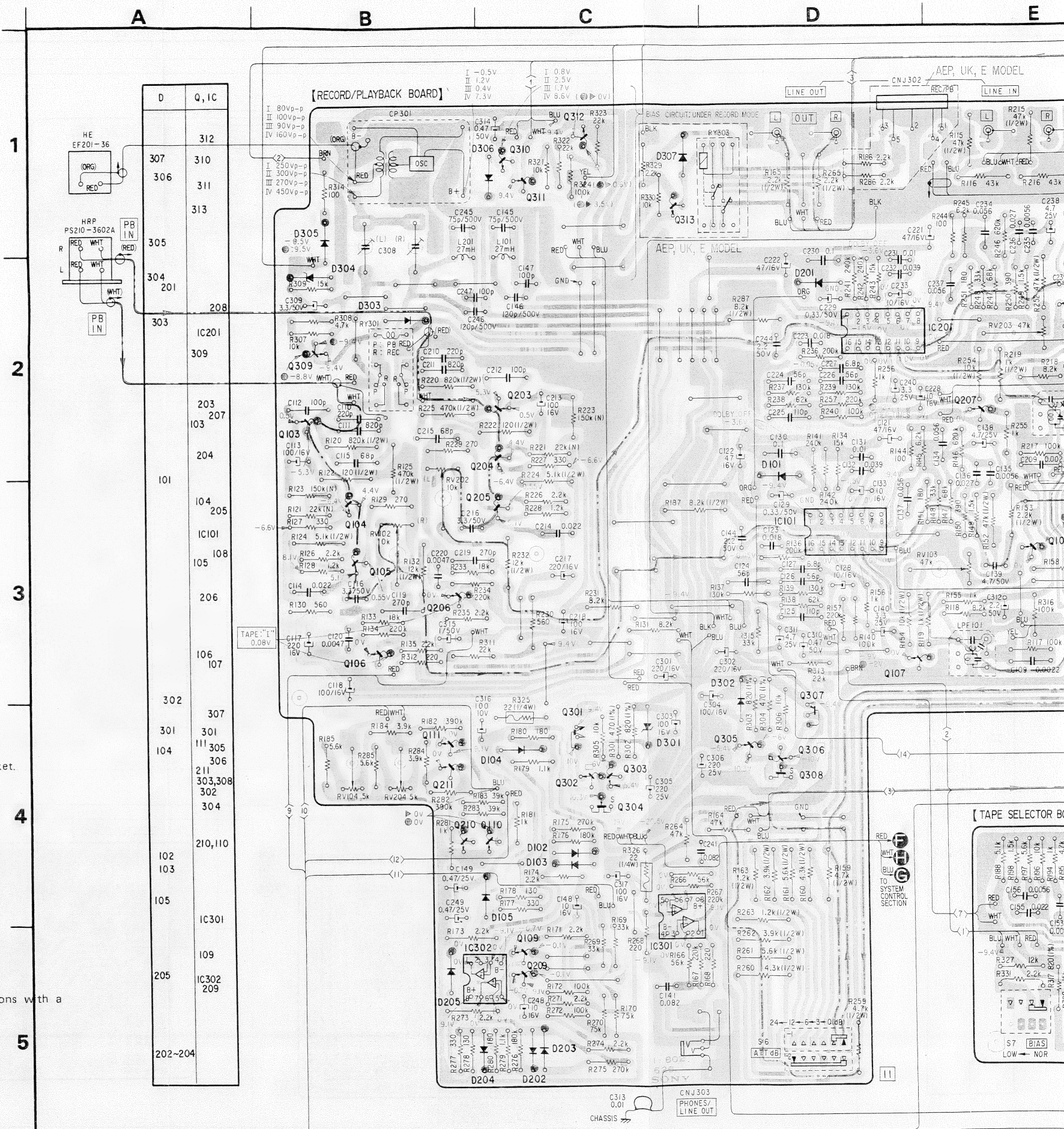
● : record

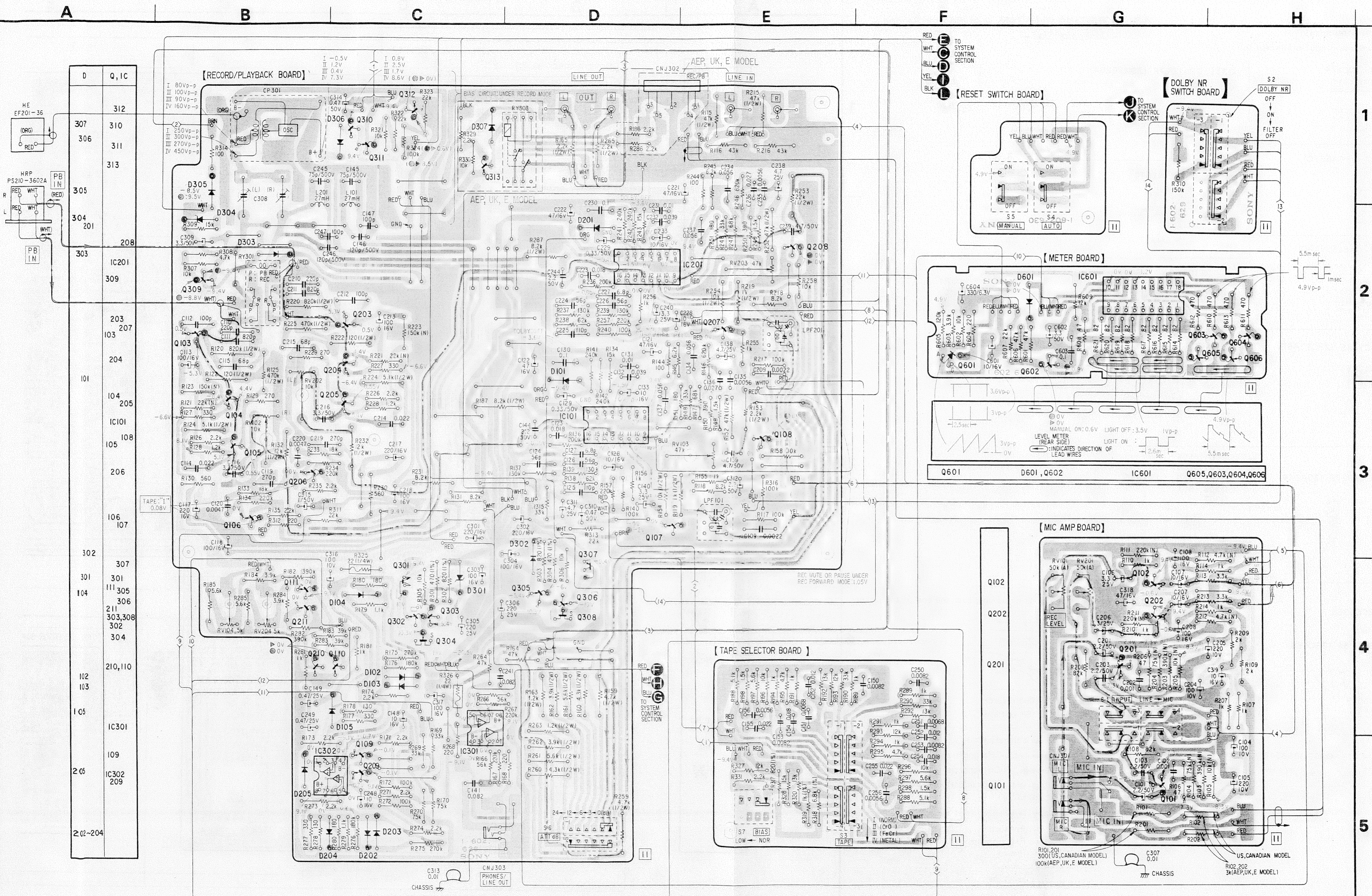
|| : pause

● : rec mute

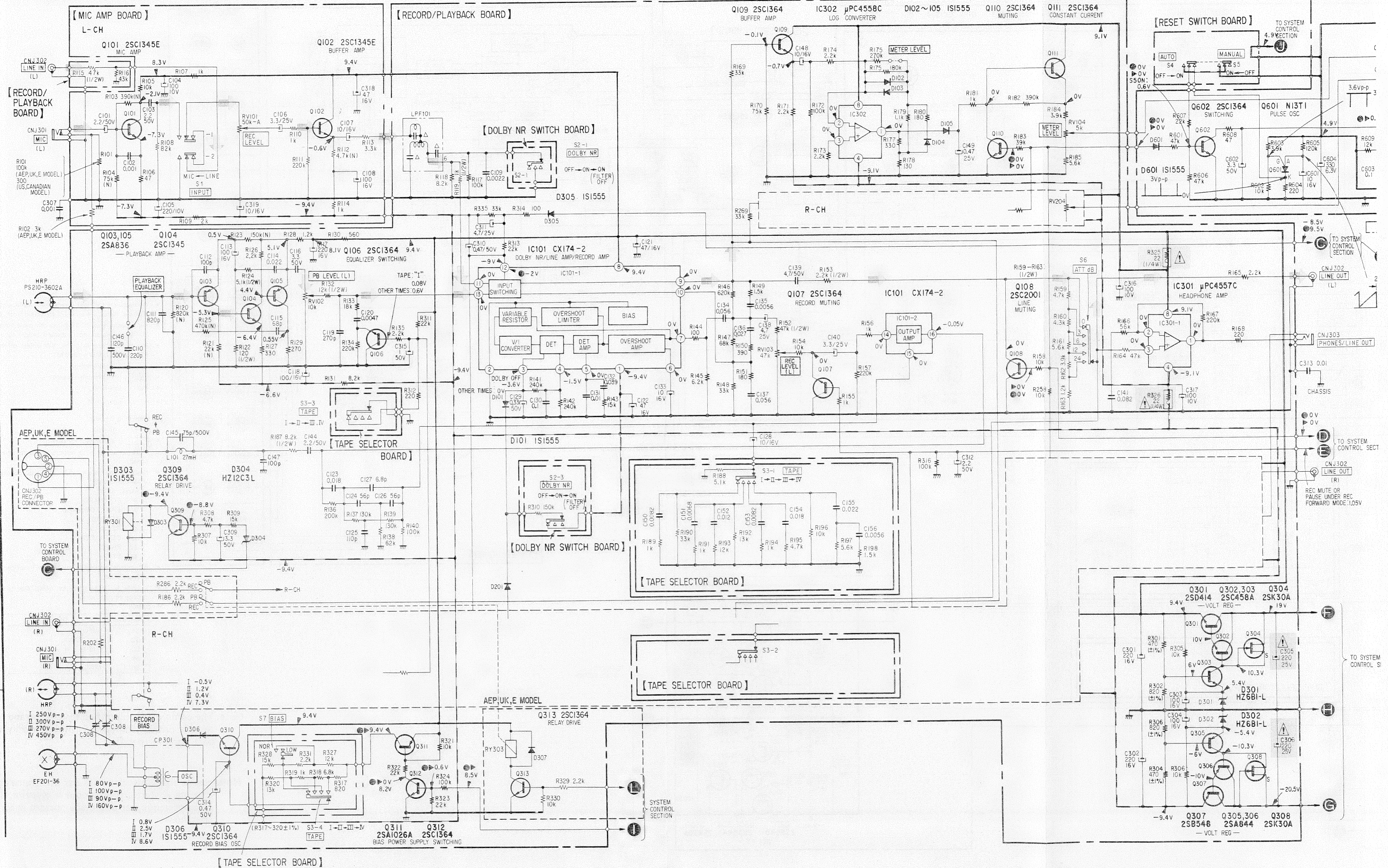
■ : stop

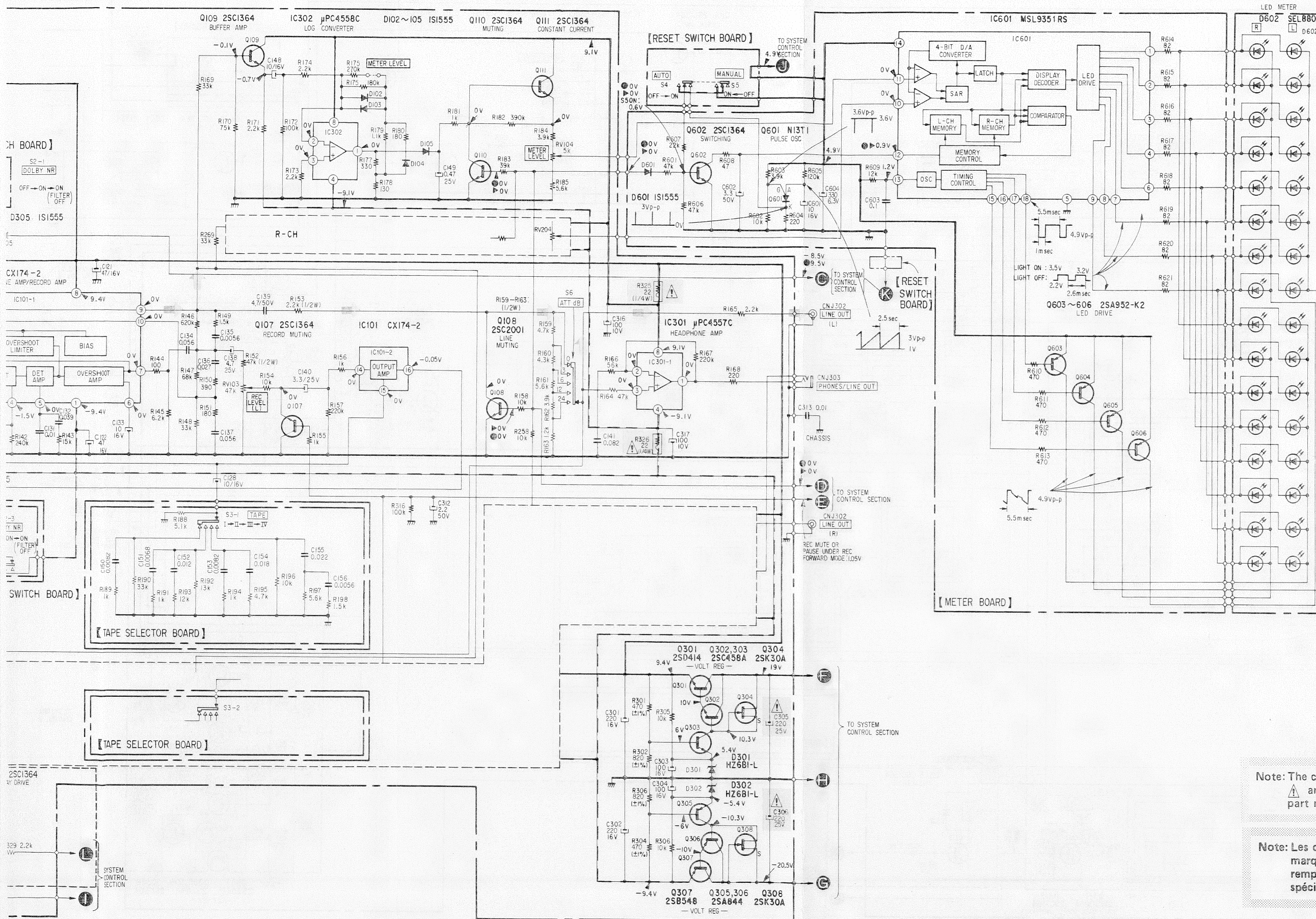
• AC voltage readings in the bias oscillator with a VTVM.










4-4. SCHEMATIC DIAGRAM — Audio Amp Section —






- Note:**


- Components for right channel have same values as for left channel. Reference numbers are coded from 200.
- All capacitors are in μF unless otherwise noted. $p\text{F} = \mu\text{F} / 100000$ or less are not indicated except for electrolytics.
- All resistors are in ohms, $\frac{1}{2}\text{W}$ unless otherwise noted. $k\Omega : 1000 \Omega$, $M\Omega = 1000 k\Omega$
-  : fusible resistor.
-  : nonflammable resistor.
- (N) : low-noise.
- : signal path

-  : B+ bus.
 -  : B- bus.
 -  : adjustment for repair.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no signal conditions with a VOM (20 k Ω /V).
- no mark: STOP
- ▶ : FORWARD
 - ▶▶ : FAST FORWARD
 - ◀◀ : REWIND
 - : RECORD
 - : REC MUTE
 - : PAUSE
 - : STOP

- AC voltage readings in the bias oscillator circuit are taken with a VTVM.
- Voltage variations may be noted due to normal production tolerances.
- Switch

Ref. No.	Switch	Position
S1	INPUT	LINE
S2	DOLBY NR	OFF
S3	TAPE	I
S4	AUTO	OFF
S5	MANUAL	OFF

Note: The components identified by shading and mark  are critical for safety. Replace only with part number specified.


Note: Les composants identifiés par une trame et une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- 1



-30-

3

Note: Les composants identifiés par une trame et une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.



31

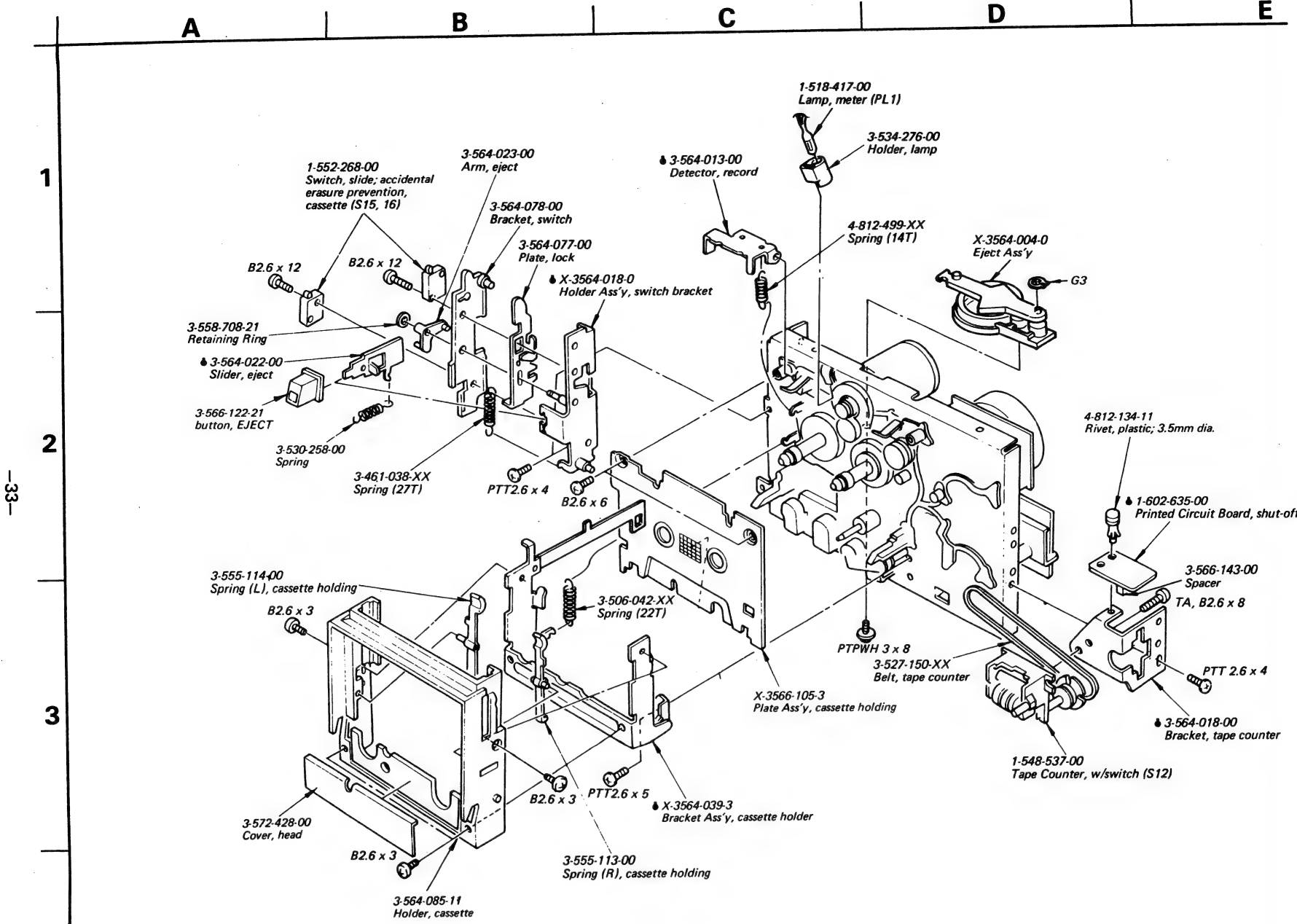
2

5-2

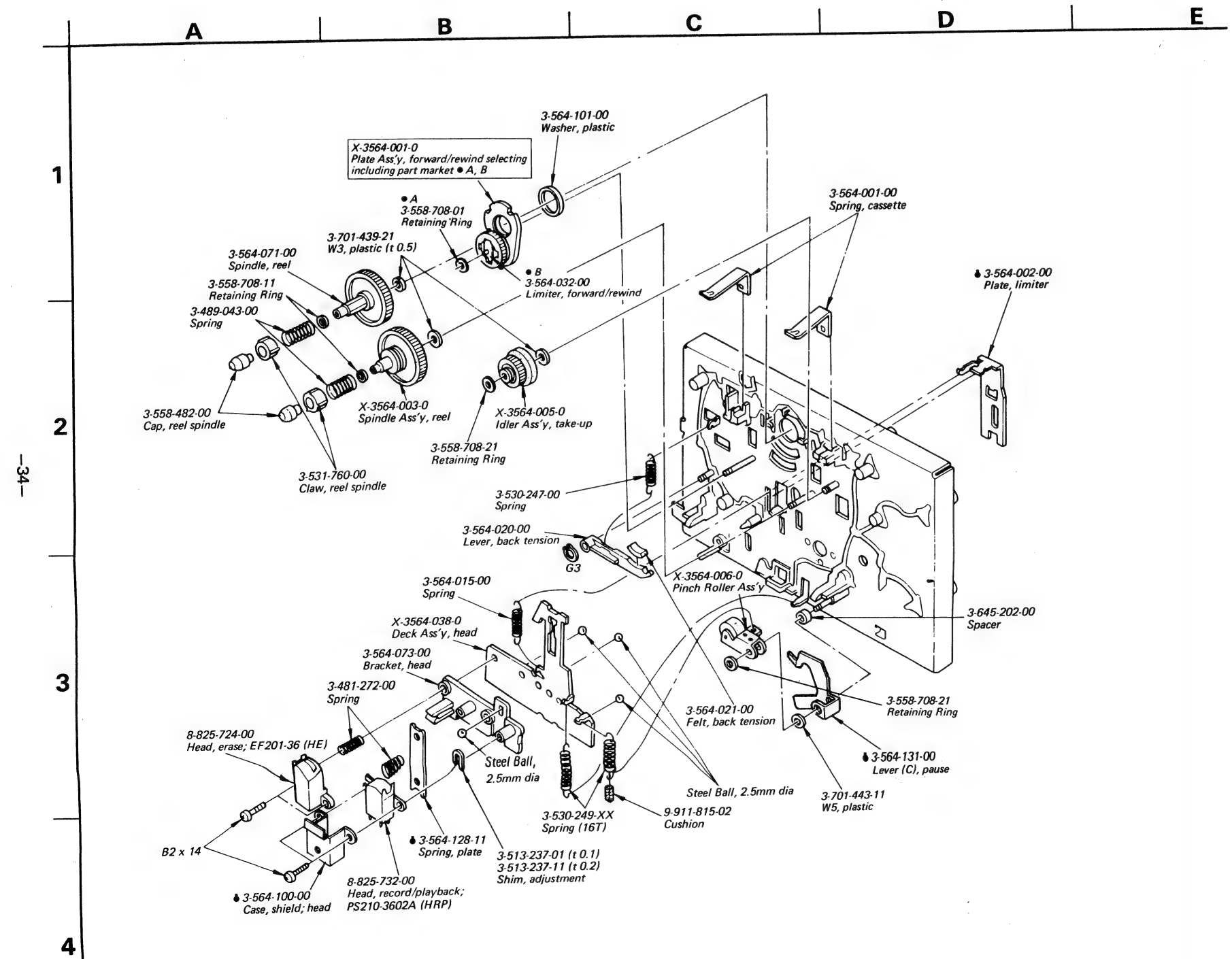
5-3

See exploded views 5-4 to 5-6.





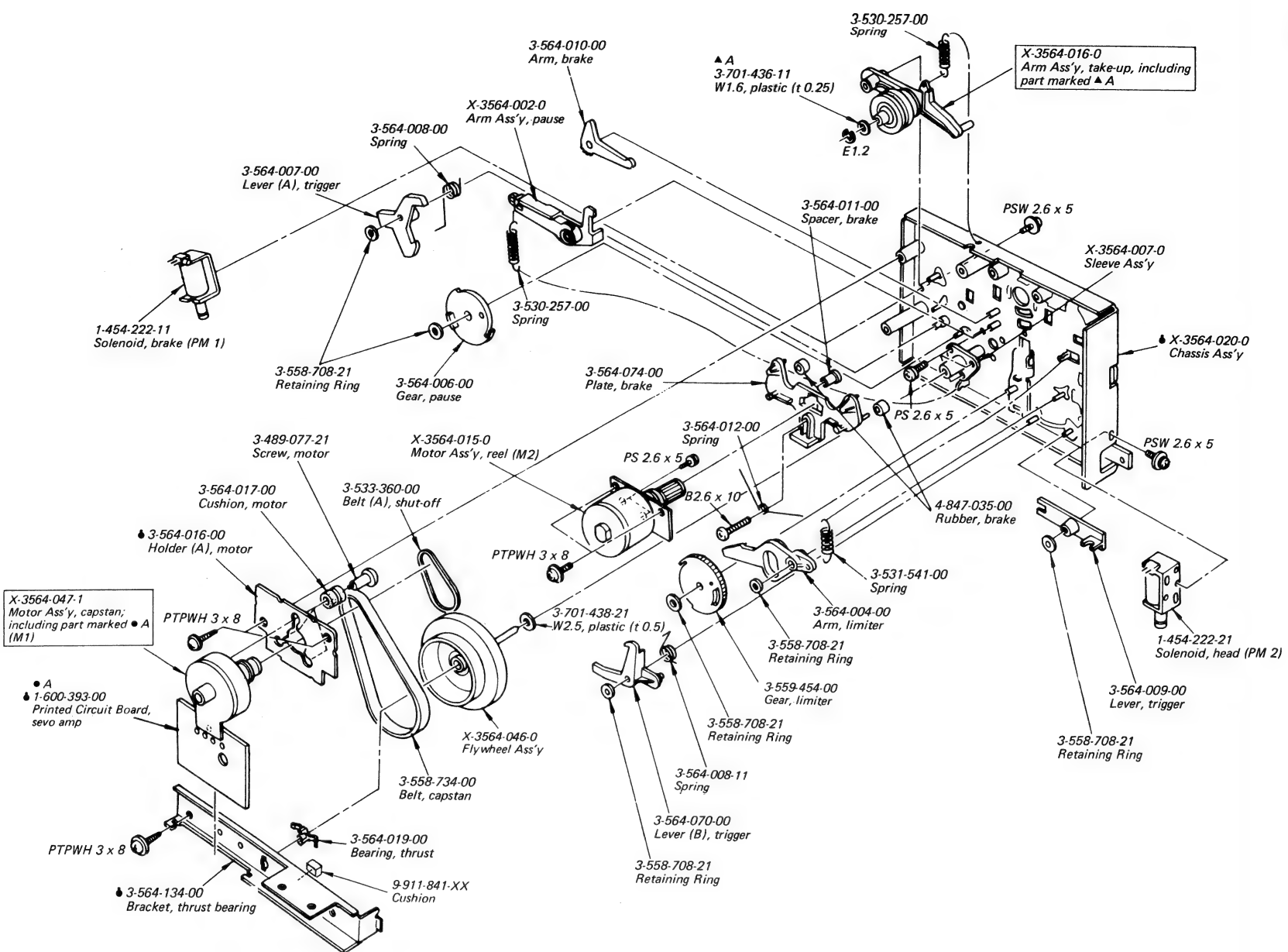
-33-




-34-

SECTION 6

ELECTRICAL PARTS LIST



Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
SEMICONDUCTORS					
Transistors					
Q101, 102 Q201, 202	8-729-334-58	2SC1345	Q819, 820 Q821	8-729-663-47 8-729-201-52	2SC1364 2SA1015
Q103, 203	8-729-612-77	2SA1027R	Q822, 823	8-729-663-47	2SC1364
Q104, 204	8-729-334-58	2SC1345	Q824—826	8-729-612-77	2SA1027R
Q105, 205	8-729-612-77	2SA1027R	Q1001,1002	8-729-663-47	2SC1364
Q106, 107 Q206, 207	8-729-663-47	2SC1364	Q1003	8-729-180-93	2SD809
			Q1004	8-729-173-13	2SB731
			Q1005	8-729-180-93	2SD809
			Q1006	8-729-173-13	2SB731
ICs					
Q108, 208 Q109—111 Q209—211	8-729-100-13	2SC2001	IC101	8-759-101-74	CX174
Q301	8-729-141-43	2SD414	IC301	8-759-145-58	μPC4558C
Q302, 303	8-729-663-47	2SC1364	IC302	8-759-145-58	μPC4558C
Q304	8-729-203-04	2SK30A	IC601	8-759-993-51	MSL9351
			IC801	8-759-147-42	μPD547C-042
Q305, 306	8-729-612-77	2SA1027R			
Q307	8-729-154-83	2SB548	IC802	8-759-904-69	MSM4069
Q308	8-729-203-04	2SK30A	IC901	8-759-133-90	μPC339C
Q309, 310	8-729-663-47	2SC1364	IC902	8-759-145-58	μPC4558C
Q311	8-729-612-77	2SA1027R	IC1001	8-750-690-00	CX069
Q312	8-729-663-47	2SC1364	IC1002	8-759-145-58	μPC4558C
Q313	8-729-663-47	2SC1364 (AEP, E model)			
Q601	8-729-101-31	N1371	Diodes		
Q602	8-729-663-47	2SC1364	D101—105 D201—205	8-719-815-55	1S1555
Q603—606	8-729-195-23	2SA952	D301, 302	8-719-910-65	HZ6B2L
	8-729-180-93	2SD809 (AEP, E model)	D303	8-719-815-55	1S1555
Q801	8-729-316-12	2SC1061 (Canadian model)	D304	8-719-910-28	HZ12C2L
Q802	8-729-201-52	2SA1015	D305, 306	8-719-815-55	1S1555
Q803	8-729-663-47	2SC1364			
Q804	8-729-173-13	2SB731	D307	8-719-815-55	1S1555 (AEP, E model)
Q805	8-729-180-93	2SD809	D601	8-719-815-55	1S1555
Q806	8-729-663-47	2SC1364	D602	1-800-822-11	SEL8806
Q807	8-729-468-43	2SA684	D801—809	8-719-200-02	1OE2
Q808, 809	8-729-100-13	2SC2001	D810, 811	8-719-910-15	HZ11B2L
Q810	8-729-173-13	2SB731			
Q811, 812	8-729-201-52	2SA1015	D812, 813	8-719-815-55	1S1555
Q814—816	8-729-663-47	2SC1364	D814	8-719-200-02	1OE2
Q817	8-729-101-13	PH103	D815	8-719-815-55	1S1555
Q818	8-729-154-83	2SB548	D816	8-719-910-25	HZ12B2L
			D817	8-719-815-55	1S1555

Note: The components identified by shading and marked  are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par une trame et une marque sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description
D819	8-719-200-02	10E2
D822-826	8-715-815-55	1S1555
D827	8-719-101-11	SR110
D828	8-719-313-31	SEL1331G
D829	8-719-311-12	SEL1112R
D830	8-719-317-41	SEL1741Y
D901-903	8-719-815-55	IS1555
D1001	8-719-910-65	HZ6B2L
D1002,1003	8-719-841-01	F1410

CAPACITORS

All capacitors are in μ F. Common capacitors are omitted. Refer to the lists on pages 40 and 41 for their part numbers. elect: electrolytic

C103, 203	1-123-230-00	2.2	50V	elect (bipolar)
C144, 244	1-130-305-00	0.022	100V	film
C114, 214	1-123-231-00	3.3	50V	elect (bipolar)
C116, 216	1-123-232-00	4.7	50V	elect (bipolar)
C139, 239	1-123-232-00	4.7	50V	elect (bipolar)
C305, 306	1-121-422-00	220	25V	elect

C308	1-141-225-00	Trimmer, record bias
C601	1-121-651-00	10 16V elect
C801, 802	1-121-657-00	1000 25V elect
C803, 804	1-123-324-00	1000 16V elect

RESISTORS

All resistors are in ohms. Common $\frac{1}{2}$ W carbon resistors are omitted. Refer to the list on the last page for their part numbers.

R115, 215	1-244-913-00	47k	$\frac{1}{2}$ W	carbon
R119, 219	1-244-873-00	1k	$\frac{1}{2}$ W	carbon
R120, 220	1-244-943-00	820k	$\frac{1}{2}$ W	carbon
R122, 222	1-244-851-00	120	$\frac{1}{2}$ W	carbon
R124, 224	1-244-890-00	5.1k	$\frac{1}{2}$ W	carbon
R125, 225	1-244-937-00	470k	$\frac{1}{2}$ W	carbon
R132, 232	1-244-899-00	12k	$\frac{1}{2}$ W	carbon
R152, 252	1-244-913-00	47k	$\frac{1}{2}$ W	carbon
R153, 253	1-244-881-00	2.2k	$\frac{1}{2}$ W	carbon
R154, 254	1-244-897-00	10k	$\frac{1}{2}$ W	carbon
R159, 259	1-244-889-00	4.7k	$\frac{1}{2}$ W	carbon
R160, 260	1-244-888-00	4.3k	$\frac{1}{2}$ W	carbon

R161, 261	1-244-891-00	5.6k	$\frac{1}{2}$ W	carbon
R162, 262	1-244-887-00	3.9k	$\frac{1}{2}$ W	carbon
R163, 263	1-244-875-00	1.2k	$\frac{1}{2}$ W	carbon
R165, 265	1-244-881-00	2.2k	$\frac{1}{2}$ W	carbon
R187, 287	1-244-895-00	8.2k	$\frac{1}{2}$ W	carbon
R301, 304	1-214-721-00	470	$\frac{1}{4}$ W	metal-oxide (1%)
R302, 303	1-214-727-00	820	$\frac{1}{4}$ W	metal-oxide (1%)
R317	1-214-749-00	6.8k	$\frac{1}{4}$ W	metal-oxide (1%)
R318	1-214-749-00	6.8k	$\frac{1}{4}$ W	metal-oxide (1%)
R319	1-214-729-00	1k	$\frac{1}{4}$ W	metal-oxide (1%)
R320	1-214-756-00	13k	$\frac{1}{4}$ W	metal-oxide (1%)

R325, 326	1-212-865-00	22	$\frac{1}{4}$ W	fusible
R801	1-206-486-00	91	2W	metal-oxide (nonflammable)
R803	1-244-873-00	1k	$\frac{1}{2}$ W	carbon
R814, 815	1-212-857-00	10	$\frac{1}{4}$ W	fusible
R832	1-213-134-00	180	1W	metal-oxide (nonflammable)
R857	1-212-942-00	2.2	$\frac{1}{2}$ W	fusible (AEP, E model)
	1-217-379-00	2.2	$\frac{1}{4}$ W	fusible (Canadian model)

R1001	1-214-777-00	100k ¼W metal-oxide (1%)
RV101, 201	1-226-835-00	50k/50k-A, variable; REC LEVEL
RV102, 202	1-224-645-XX	10k-B, adjustable; playback level
RV103, 203	1-224-647-XX	47k-B, adjustable; record level
RV104, 204	1-226-235-00	5k-B, adjustable; level meter
RV1001	1-224-661-00	50k-B, adjustable; tape speed

MISCELLANEOUS

CN1	1-535-116-00	Terminal, 3P; w/base
CN2	1-535-115-00	Terminal, 2P; w/base
CN3	1-560-064-00	Pin, connector
CN4	1-535-117-00	Terminal, 4P; w/base (Canadian model)
	1-535-118-00	Terminal, 5P; w/base (AEP, E model)
CN5	1-561-379-00	Socket, 4P; connector
CN6	1-561-378-00	Socket, 3P; connector
CN7	1-561-380-00	Socket, 5P; connector

CN8, 9	1-560-062-00	Pin, 4P; connector
CN10	1-560-060-00	Pin, 2P; connector
CN11	1-535-115-00	Terminal, 2P; w/base
CN1001	1-560-064-00	Pin, connector
CNJ301	1-507-525-00	Jack, MIC
	1-507-531-31	Jack, phono, 4P; LINE IN/ LINE OUT (Canadian model)
CNJ302	1-536-501-31	Jack, phono, 4P; LINE IN/ LINE OUT (AEP, E model)
CNJ303	1-507-553-00	Jack, PHONES
CNJ901	1-561-293-00	Socket, REMOTE
CP301	1-464-110-00	Unit, bias osc

CP801	1-231-341-00	Encapsulated Component (Canadian, E model)
	1-130-456-00	Capacitor, film; 0.022 μ F 250V (AEP model)

HE	8-825-724-00	Head, erase; EF201-36
HRP	8-825-732-00	Head, record/playback; PS210-3602A
J7	1-212-867-00	Resistor, fusible 27 Ω , $\frac{1}{4}$ W (AEP, E model)

L101, 201	1-408-262-00	microinductor, 27mH
LPF101, 201	1-231-388-00	Filter, low-pass
M1	X-3564-047-1	Motor Ass'y, capstan

M2	X-3564-015-0	Motor Ass'y, reel
PL1	1-518-417-00	Lamp, meter
PL2	1-518-340-71	Lamp, cassette
PM1	1-454-222-11	Solenoid, brake
PM2	1-454-222-21	Solenoid, head
RY301	1-515-323-00	Relay
RY303	1-515-297-00	Relay, reed (AEP, E model)

S1	1-552-879-00	Switch, pushbutton; INPUT
S2	1-553-306-00	Switch, rotary-slide; DOLBY NR
S3	1-553-305-00	Switch, rotary-slide; TAPE
S4, 5	1-552-876-00	Switch, pushbutton; PEAK HOLD, RESET
S6	1-553-307-00	Switch, rotary; ATT dB
S7	1-552-807-00	Switch, rotary; BIAS
S5-11	1-552-919-00	Switch Ass'y, function including:
	1-553-235-00	Switch, keyboard
S12	1-548-537-00	Tape Counter, w/switch

S13	1-552-255-00	Switch, pushbutton; MEMORY
S14	1-552-520-00	Switch, slide; timer
S15, 16	1-552-268-00	Switch, slide; accidental erasure prevention, cassette
S17	1-553-318-00	Switch, pushbutton; POWER (AEP, E model)
	1-553-418-00	Switch, pushbutton; POWER (Canadian model)
T801	1-446-350-00	Transformer, power (Canadian model)
	1-446-351-00	Transformer, power (AEP model)
	1-446-518-00	Transformer, power (E model)
	1-508-878-00	Base Post, 3P
	1-508-879-00	Base Post, 4P
	1-526-576-21	Voltage Selector (E model)
	1-534-817-XX	Cord, power (AEP model)
	1-534-986-XX	Cord, power (Canadian model)
	1-551-530-00	Cord, power; euro plug (E model)

Complete Circuit Boards

A-2010-162-A	Record/playback (Canadian model)
A-2010-177-A	Record/playback (AEP, E model)
A-2019-110-A	System Control (Canadian model)
A-2019-125-A	System Control (AEP, E model)
A-2022-033-A	Mic Amp (Canadian model)
A-2022-037-A	Mic Amp (AEP, E model)

Printed Circuit Boards

1-600-393-00	Servo Amp
1-602-628-00	Tape Selector
1-602-629-00	Dolby Switch
1-602-630-00	Reset Switch
1-602-631-00	Meter
1-602-633-00	Memory Switch
1-602-634-00	Timer Switch
1-602-635-00	Shut-off

ACCESSORIES AND PACKING MATERIALS	
Part No.	Description
X-3701-105-0	Tip Ass'y, head cleaning
1-551-734-11	Cord, connecting; RK-74A
3-566-148-00	Cushion, upper; front
3-566-149-00	Cushion upper; back
3-566-150-00	Cushion, lower; right
3-566-151-00	Cushion, lower; left
3-572-442-00	Carton
3-701-630-00	Bag, plastic
3-783-351-11	Manual, instruction
3-795-035-12	(AEP model)
3-783-351-11	Manual, instruction (E model)
3-783-351-21	Manual, instruction
3-795-085-31	(Canadian model)
3-793-828-11	Card, caution; cassette
4-860-421-00	Bag; plastic
	Tape (Fe-Cr 46)
	(Canadian model)

ELECTROLYTIC CAPACITORS

CAP. (μF)	RATING → : Use the high voltage rated one.					
	6.3 VOLT.	10 VOLT.	16 VOLT.	25 VOLT.	35 VOLT.	50 VOLT.
	PART No.	PART No.	PART No.	PART No.	PART No.	PART No.
0.47					→	1-121-726-00
1.0					→	1-121-391-00
2.2					→	1-121-450-00
3.3	→	→	→	1-121-392-00	→	1-121-393-00
4.7	→	→	→	1-121-395-00	→	1-121-396-00
10	→	→	1-121-651-00	1-121-398-00	→	1-121-738-00
22	→	→	1-121-479-00	1-121-480-00	1-121-662-00	1-121-152-00
33	→	→	1-121-403-00	1-121-404-00	1-121-652-00	1-121-405-00
47	→	1-121-352-00	1-121-409-00	1-121-410-00	1-121-653-00	1-121-411-00
100	→	1-121-414-00	1-121-415-00	1-121-416-00	1-121-357-00	1-121-417-00
220	1-121-419-00	1-121-420-00	1-121-421-00	1-121-422-00	1-121-261-00	1-121-423-00
330	1-121-751-00	1-121-805-00	1-121-521-00	1-121-654-00	1-121-655-00	1-121-656-00
470	1-121-424-00	1-121-425-00	1-121-426-00	1-121-733-00	1-121-361-00	1-121-810-00
1000	—	1-121-736-00	1-121-245-00	1-121-657-00	1-121-388-00	1-123-061-00
2200	1-121-658-00	1-121-659-00	1-121-660-00	1-123-067-00	1-121-984-00	—
3300	1-121-661-00	1-123-075-00	1-123-071-00	—	—	—

CAP. (μF)	100 VOLT.	160 VOLT.	250 VOLT.	350 VOLT.
	PART No.	PART No.	PART No.	PART No.
0.47	—	—	—	—
1.0	1-123-249-00	1-123-252-00	1-123-003-00	1-121-168-00
2.2	1-123-250-00	1-123-026-00	—	1-123-028-00
3.3	1-121-995-00	—	1-123-004-00	1-123-006-00
4.7	1-123-255-00	1-121-246-00	1-121-759-00	1-123-007-00
10	1-121-126-00	1-121-999-00	1-123-254-00	1-123-008-00
22	1-121-996-00	1-123-253-00	1-123-005-00	1-123-022-00
33	1-121-997-00	1-121-757-00	—	—
47	1-123-251-00	1-121-919-00	—	—
100	1-123-084-00	—	—	—

CERAMIC CAPACITORS

RATING							
CAP. (pF)	50 VOLT.	CAP. (pF)	50 VOLT.	CAP. (pF)	50 VOLT.	CAP. (μF)	50 VOLT.
	PART No.		PART No.		PART No.		PART No.
0.5	1-101-837-00	22	1-102-959-00	150	1-101-361-00	0.001	1-102-074-00
0.75	1-101-586-00	24	1-102-960-00	160	1-101-367-00	0.0012	1-102-118-00
1.0	1-102-934-00	27	1-102-961-00	180	1-102-976-00	0.0015	1-102-119-00
1.5	1-101-576-00	30	1-102-962-00	200	1-102-977-00	0.0018	1-102-120-00
2.0	1-102-935-00	33	1-102-963-00	220	1-102-978-00	0.0022	1-102-121-00
3	1-102-936-00	36	1-102-964-00	240	1-102-979-00	0.0027	1-102-122-00
4	1-102-937-00	39	1-102-965-00	270	1-102-980-00	0.0033	1-102-123-00
5	1-102-942-00	43	1-102-966-00	300	1-102-981-00	0.0039	1-102-124-00
6	1-102-943-00	47	1-101-880-00	330	1-102-820-00	0.0047	1-102-125-00
7	1-102-944-00	51	1-101-882-00	360	1-102-821-00	0.0056	1-102-126-00
8	1-102-945-00	56	1-101-884-00	390	1-102-822-00	0.0068	1-102-127-00
9	1-102-946-00	62	1-101-886-00	430	1-102-823-00	0.0082	1-102-128-00
10	1-102-947-00	68	1-101-888-00	470	1-102-824-00	0.01	1-102-129-00
11	1-102-948-00	75	1-101-890-00	510	1-101-059-00	0.022	1-101-005-00
12	1-102-949-00	82	1-102-971-00	560	1-102-115-00	0.047	1-101-006-00
13	1-102-950-00	91	1-102-972-00	680	1-102-116-00		
15	1-102-951-00	100	1-102-973-00	820	1-102-117-00		
16	1-102-952-00	110	1-102-815-00				
18	1-102-953-00	120	1-102-816-00				
20	1-102-958-00	130	1-101-081-00				

0.001μF = 1,000pF

CERAMIC (SEMICONDUCTOR) CAPACITORS

RATING → : Use the high voltage rated one.					
CAP. (μF)	25 VOLT.	50 VOLT.	CAP. (μF)	25 VOLT.	50 VOLT.
	PART No.	PART No.		PART No.	PART No.
0.001	→	1-161-039-00	0.018	1-161-016-00	1-161-054-00
0.0012	→	1-161-040-00	0.022	1-161-017-00	1-161-055-00
0.0015		1-161-041-00	0.027	1-161-018-00	1-161-056-00
0.0018		1-161-042-00	0.033	1-161-019-00	1-161-057-00
0.0022		1-161-043-00	0.039	1-161-010-00	1-161-058-00
0.0027	→	1-161-044-00	0.047	1-161-021-00	1-161-059-00
0.0033	→	1-161-045-00	0.056	→	1-161-060-00
0.0039	→	1-161-046-00	0.068	→	1-161-061-00
0.0047	→	1-161-047-00	0.082	1-161-024-00	1-161-062-00
0.0056	→	1-161-048-00	0.1	1-161-025-00	1-161-063-00
0.0068	→	1-161-049-00			
0.0082	1-161-012-00	1-161-050-00			
0.01	1-161-013-00	1-161-051-00			
0.012	→	1-161-052-00			
0.015	1-161-015-00	1-161-053-00			

MYLAR CAPACITORS

RATING											
CAP. (μF)	50 VOLT.	100 VOLT.	200 VOLT.	CAP. (μF)	50 VOLT.	100 VOLT.	200 VOLT.	CAP. (μF)	50 VOLT.	100 VOLT.	200 VOLT.
	PART No.	PART No.	PART No.		PART No.	PART No.	PART No.		PART No.	PART No.	PART No.
0.001	1-108-227-00	1-108-365-00	1-108-409-00	0.01	1-108-239-00	1-108-377-00	1-108-421-00	0.1	1-108-251-00	1-108-389-00	1-108-433-00
0.0012	1-108-351-00	1-108-366-00	1-108-410-00	0.012	1-108-357-00	1-108-378-00	1-108-422-00	0.12	1-108-363-00	1-108-390-00	1-108-434-00
0.0015	1-108-228-00	1-108-367-00	1-108-411-00	0.015	1-108-240-00	1-108-379-00	1-108-423-00	0.15	1-108-252-00	1-108-391-00	1-108-435-00
0.0018	1-108-352-00	1-108-368-00	1-108-412-00	0.018	1-108-358-00	1-108-380-00	1-108-424-00	0.18	1-108-364-00	1-108-392-00	1-108-436-00
0.0022	1-108-230-00	1-108-369-00	1-108-413-00	0.022	1-108-242-00	1-108-381-00	1-108-425-00	0.22	1-108-254-00	1-108-393-00	1-108-437-00
0.0027	1-108-353-00	1-108-370-00	1-108-414-00	0.027	1-108-359-00	1-108-382-00	1-108-426-00	0.27	1-108-854-00	—	—
0.0033	1-108-232-00	1-108-371-00	1-108-415-00	0.033	1-108-244-00	1-108-383-00	1-108-427-00	0.33	1-108-855-00	—	—
0.0039	1-108-354-00	1-108-372-00	1-108-416-00	0.039	1-108-360-00	1-108-384-00	1-108-428-00	0.39	1-108-856-00	—	—
0.0047	1-108-234-00	1-108-373-00	1-108-417-00	0.047	1-108-246-00	1-108-385-00	1-108-429-00	0.47	1-108-857-00	—	—
0.0056	1-108-355-00	1-108-374-00	1-108-418-00	0.056	1-108-361-00	1-108-386-00	1-108-430-00				
0.0068	1-108-237-00	1-108-375-00	1-108-419-00	0.068	1-108-249-00	1-108-387-00	1-108-431-00				
0.0082	1-108-356-00	1-108-376-00	1-108-420-00	0.082	1-108-362-00	1-108-388-00	1-108-432-00				



TANTALUM CAPACITORS

RATING → : Use the high voltage rated one.							
CAP. (μF)	3.15 VOLT.	6.3 VOLT.	10 VOLT.	16 VOLT.	20 VOLT.	25 VOLT.	35 VOLT.
	PART No.	PART No.	PART No.	PART No.	PART No.	PART No.	PART No.
0.01					→	→	1-131-396-00
0.015						→	1-131-397-00
0.022						→	1-131-398-00
0.033						→	1-131-399-00
0.047						→	1-131-400-00
0.068					→	→	1-131-401-00
0.1					→	→	1-131-402-00
0.15					→	→	1-131-403-00
0.22					→	→	1-131-404-00
0.33					→	1-131-409-00	1-131-405-00
0.47	—	—	—	—	1-131-412-00	→	1-131-406-00
0.68	—	—	—	1-131-415-00	→	1-131-410-00	1-131-407-00
1.0	—	—	1-131-418-00	—	1-131-413-00	→	1-131-408-00
1.5	—	1-131-421-00	—	1-131-416-00	→	1-131-411-00	1-131-348-00
2.2	1-131-424-00	—	1-131-419-00	—	1-131-414-00	1-131-355-00	1-131-349-00
3.3	—	1-131-422-00	—	1-131-417-00	1-131-362-00	1-131-356-00	1-131-350-00
4.7	1-131-425-00	—	1-131-420-00	1-131-369-00	1-131-363-00	1-131-357-00	1-131-351-00
6.8	—	1-131-423-00	1-131-376-00	1-131-370-00	1-131-364-00	1-131-358-00	1-131-352-00
10	1-131-426-00	1-131-383-00	1-131-377-00	1-131-371-00	1-131-365-00	1-131-359-00	1-131-353-00
15	1-131-390-00	1-131-384-00	1-131-378-00	1-131-372-00	1-131-366-00	1-131-360-00	—
22	1-131-391-00	1-131-385-00	1-131-379-00	1-131-373-00	1-131-367-00		
33	1-131-392-00	1-131-386-00	1-131-380-00	1-131-374-00			
47	1-131-393-00	1-131-387-00	1-131-381-00	—			
68	1-131-394-00	1-131-388-00	—	—			
100	1-131-395-00	—	—	—			



TANTALUM CAPACITORS

RATING						
CAP. (μF)	3 VOLT.	6.3 VOLT.	10 VOLT.	16 VOLT.	20 VOLT.	35 VOLT.
	PART No.	PART No.	PART No.	PART No.	PART No.	PART No.
0.033						1-131-273-00
0.047						1-131-274-00
0.068						1-131-275-00
0.1						1-131-276-00
0.15						1-131-277-00
0.22			—	—	1-131-262-00	1-131-278-00
0.33			—	—	1-131-263-00	1-131-279-00
0.47			1-131-169-00	—	1-131-264-00	1-131-280-00
0.68			—	1-131-258-00	1-131-265-00	1-131-281-00
1.0			1-131-254-00	—	1-131-266-00	1-131-282-00
1.5		1-131-250-00	—	—	1-131-267-00	1-131-283-00
2.2		—	—	1-131-259-00	1-131-268-00	1-131-284-00
3.3		—	1-131-255-00	—	1-131-269-00	—
4.7		1-131-251-00	1-131-171-00	—	1-131-270-00	—
6.8		—	—	1-131-260-00	1-131-271-00	—
10	—	—	1-131-256-00	—	1-131-272-00	—
15	—	1-131-252-00	—	1-131-261-00	—	—
22	—	—	1-131-257-00	—	—	—
33	1-131-176-00	1-131-253-00	1-131-173-00	—	—	—
47	1-131-288-00	1-131-174-00	—	—	—	—
100	1-131-177-00	—	—	—	—	—

1/4 WATT CARBON RESISTORS

Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.
1.0	1-246-401-00	10	1-246-425-00	100	1-246-449-00	1.0k	1-246-473-00	10k	1-246-497-00	100k	1-246-521-00
1.1	1-246-402-00	11	1-246-426-00	110	1-246-450-00	1.1k	1-246-474-00	11k	1-246-498-00	110k	1-246-522-00
1.2	1-246-403-00	12	1-246-427-00	120	1-246-451-00	1.2k	1-246-475-00	12k	1-246-499-00	120k	1-246-523-00
1.3	1-246-404-00	13	1-246-428-00	130	1-246-452-00	1.3k	1-246-476-00	13k	1-246-500-00	130k	1-246-524-00
1.5	1-246-405-00	15	1-246-429-00	150	1-246-453-00	1.5k	1-246-477-00	15k	1-246-501-00	150k	1-246-525-00
1.6	1-246-406-00	16	1-246-430-00	160	1-246-454-00	1.6k	1-246-478-00	16k	1-246-502-00	160k	1-246-526-00
1.8	1-246-407-00	18	1-246-431-00	180	1-246-455-00	1.8k	1-246-479-00	18k	1-246-503-00	180k	1-246-527-00
2.0	1-246-408-00	20	1-246-432-00	200	1-246-456-00	2.0k	1-246-480-00	20k	1-246-504-00	200k	1-246-528-00
2.2	1-246-409-00	22	1-246-433-00	220	1-246-457-00	2.2k	1-246-481-00	22k	1-246-505-00	220k	1-246-529-00
2.4	1-246-410-00	24	1-246-434-00	240	1-246-458-00	2.4k	1-246-482-00	24k	1-246-506-00	240k	1-246-530-00
2.7	1-246-411-00	27	1-246-435-00	270	1-246-459-00	2.7k	1-246-483-00	27k	1-246-507-00	270k	1-246-531-00
3.0	1-246-412-00	30	1-246-436-00	300	1-246-460-00	3.0k	1-246-484-00	30k	1-246-508-00	300k	1-246-532-00
3.3	1-246-413-00	33	1-246-437-00	330	1-246-461-00	3.3k	1-246-485-00	33k	1-246-509-00	330k	1-246-533-00
3.6	1-246-414-00	36	1-246-438-00	360	1-246-462-00	3.6k	1-246-486-00	36k	1-246-510-00	360k	1-246-534-00
3.9	1-246-415-00	39	1-246-439-00	390	1-246-463-00	3.9k	1-246-487-00	39k	1-246-511-00	390k	1-246-535-00
4.3	1-246-416-00	43	1-246-440-00	430	1-246-464-00	4.3k	1-246-488-00	43k	1-246-512-00	430k	1-246-536-00
4.7	1-246-417-00	47	1-246-441-00	470	1-246-465-00	4.7k	1-246-489-00	47k	1-246-513-00	470k	1-246-537-00
5.1	1-246-418-00	51	1-246-442-00	510	1-246-466-00	5.1k	1-246-490-00	51k	1-246-514-00	510k	1-246-538-00
5.6	1-246-419-00	56	1-246-443-00	560	1-246-467-00	5.6k	1-246-491-00	56k	1-246-515-00	560k	1-246-539-00
6.2	1-246-420-00	62	1-246-444-00	620	1-246-468-00	6.2k	1-246-492-00	62k	1-246-516-00	620k	1-246-540-00
6.8	1-246-421-00	68	1-246-445-00	680	1-246-469-00	6.8k	1-246-493-00	68k	1-246-517-00	680k	1-246-541-00
7.5	1-246-422-00	75	1-246-446-00	750	1-246-470-00	7.5k	1-246-494-00	75k	1-246-518-00	750k	1-246-542-00
8.2	1-246-423-00	82	1-246-447-00	820	1-246-471-00	8.2k	1-246-495-00	82k	1-246-519-00	820k	1-246-543-00
9.1	1-246-424-00	91	1-246-448-00	910	1-246-472-00	9.1k	1-246-496-00	91k	1-246-520-00	910k	1-246-544-00

HARDWARE NOMENCLATURE

Screw:

P 3 x 10

L: Length in mm

D: Diameter in mm

Type of head

Indicated slotted-head only.

Unless otherwise indicated, it means cross-recessed head (Phillips type).

Nut, Washer, Retaining ring:

N 3

Diameter of usable screw or shaft

Reference designation

Reference Designation	Shape	Description	Remarks
SCREWS			
P		pan-head screw	binding-head (B) screw for replacement
PWH		pan-head screw with washer face	binding-head (B) screw and flat washer for replacement
PS PSP		pan-head screw with spring washer	binding-head (B) screw and spring washer for replacement
PSW PSPW		pan-head screw with spring and flat washers	binding-head (B) screw and spring and flat washers for replacement
R		round-head screw	binding-head (B) screw for replacement
K		flat-countersunk-head screw	
RK		oval-countersunk-head screw	
B		binding-head screw	
T		truss-head screw	binding-head (B) screw for replacement
F		flat-fillister-head screw	
RF		fillister-head screw	
BV		brazer-head screw	

Reference Designation	Shape	Description	Remarks
SELF-TAPPING SCREWS			
TA		self-tapping screw	ex: TA, P 3 x 10
PTP		pan-head self-tapping screw	binding-head self-tapping (TA, B) screw for replacement
PTPWH		pan-head self-tapping screw with washer face	binding-head self-tapping (TA, B) screw and flat washer for replacement
PTTWH		pan-head thread-rolling screw with washer face	binding-head (B) screw and flat washer for replacement
SET SCREWS			
SC		set screw	
SC		hexagon-socket set screw	ex: SC 2.6 x 4, hexagon socket
NUT			
N		nut	
WASHERS			
W		flat washer	
SW		spring washer	
LW		internal-tooth lock washer	ex: LW3, internal
LW		external-tooth lock washer	ex: LW3, external
RETAINING RINGS			
E		retaining ring	
G		grip-type retaining ring	

Sony Corporation

© 1980

-42-